Contents

Number 1 July 1998

J. MAXWELL CHAMBERLAIN MEMORIAL PAPER

1 **Does Arterial Revascularization Decrease the Risk of Infarction After Coronary Artery Bypass Grafting?**
Paul T. Sergeant, MD, PhD, Eugene H. Blackstone, MD, and Bart P. Meyns, MD, PhD

THORACIC SURGERY DIRECTORS ASSOCIATION AWARD

12 **Angiogenesis and Growth Factor Expression in a Model of Transmyocardial Revascularization**
Marc P. Pelletier, MD, Adel Giaid, PhD, Sujith Sivaraman, BSc, Julia Dorfman, MD, Carlos M. Li, MD, Anie Philip, PhD, and Ray C.-J. Chiu, MD, PhD

ORIGINAL ARTICLES: CARDIOVASCULAR

19 **Endovascular Stent Graft Repair for Aneurysms on the Descending Thoracic Aorta**
Marek Ehrlich, MD, Martin Grabenwoeger, MD, Fabiola Cartes-Zumelzu, MD, Michael Grimm, MD, Dietmar Petzl, MD, Johannes Lammer, MD, Siegfried Thurnher, Ernst Wolner, MD, and Michael Havel, MD

26 **Endoscopic Versus Traditional Saphenous Vein Harvesting: A Prospective, Randomized Trial**
Keith B. Allen, MD, Gary L. Griffith, MD, David A. Heimansohn, MD, Robert J. Robison, MD, Robert G. Matheny, MD, John J. Schier, MD, Edward B. Fitzgerald, MD, and Carl J. Shaar, PhD

33 **Arterial Inflow via an Axillary Artery Graft for the Severely Atheromatous Aorta**
Yvon R. Baribeau, MD, Benjamin M. Westbrook, MD, David C. Charlesworth, MD, and Christopher T. Maloney, MD

38 **Retrograde Cerebral Perfusion Enhances Cerebral Protection During Prolonged Hypothermic Circulatory Arrest: A Study in a Chronic Porcine Model**
Tatu Juvonen, MD, PhD, Ning Zhang, MD, David Wolfe, MD, Donald J. Weisz, PhD, Carol A. Bodian, DrPH, Howard H. Shiang, DVM, Jock N. McCullough, MD, and Randall B. Griepp, MD

51 **Intraoperative MIDCABG Arteriography via the Left Radial Artery: A Comparison With Doppler Ultrasound for Assessment of Graft Patency**
Joseph R. Elbeery, MD, Philip M. Brown, MD, and W. Randolph Chitwood, Jr, MD

56 **Inflammatory Response After Myocardial Revascularization With or Without Cardiopulmonary Bypass**
Luiz A. Brasil, MD, Walter J. Gomes, MD, Reinaldo Salomão, MD, and Enio Buffolo, MD

60 **Cardiac Operations in Octogenarians: Perioperative Risk Factors for Death and Impaired Autonomy**
Matthias Kirsch, MD, Laurent Guesnier, MD, Paul LeBesnerais, MD, Marie-Line Hillion, MD, Matthieu Debauchez, MD, Jacques Seguin, MD, and Daniel Y. Loisance, MD

68 **Surgical Management of Mitral Regurgitation Associated With Marfan's Syndrome**
Jean-François G. Fuzellier, MD, Sylvain M. Chauvaud, MD, Paul Fornes, MD, PhD, Alain J. Berrebi, MD, Paul S. Lajos, MD, Patrick Bruneval, MD, and Alain F. Carpentier, MD, PhD

Invited Commentary
Vincent L. Gott, MD

73 **Function of Adult Pig Hearts After 2 and 12 Hours of Cold Cardioplegic Preservation**
Algimantas Budrikis, MD, Ramunas Bolys, MD, Quiming Liao, MD, Richard Ingemansson, MD, PhD, Trygve Sjöberg, PhD, and Stig Steen, MD, PhD

79 **Assessment of Internal Thoracic Artery Graft With Intraoperative Color Doppler Ultrasonography**
Katsushi Oda, MD, Kunihiko Hirose, MD, Hideaki Nishimori, MD, Koji Sato, MD, Toshiyuki Yamashiro, MD, and Shohei Ogoshi, MD, PhD

82 **Elephant Trunk Procedure for Surgical Treatment of Aortic Dissection**
Motomi Ando, MD, Shinichi Takamoto, MD, Yutaka Okita, MD, Tetsuro Morota, MD, Ritsu Matsukawa, MD, and Soichiro Kitamura, MD

88 **Repeat Aortic Root Replacement**
Chiwon Hahn, MD, Stanley K. C. Tam, MD, Gus J. Vlahakes, MD, Alan D. Hilgenberg, MD, Cary W. Akins, MD, and Mortimer J. Buckley, MD

92 **Serious Wound Infections After Minimally Invasive Coronary Bypass Procedures**
Sebastian Pagni, MD, Ellis J. Salloum, MD, Gordon R. Tobin, MD, Daniel J. VanHimbergen, BS, and Paul A. Spence, MD

95 **Atrial Ablation With an IRK-151 Infrared Coagulator**
Hiroshi Kubota, MD, Akira Furuse, MD, Mika Takeshita, MD, Yutaka Kotsuka, MD, and Shinichi Takamoto, MD

101 **Thromboembolism and Mechanical Heart Valves: A Randomized Study Revisited**
Carl E. E. Kuntze, MD, Eugene H. Blackstone, MD, and Tjark Ebels, MD, PhD

108 **Can L-Arginine Improve Myocardial Protection During Cardioplegic Arrest? Results of a Phase I Pilot Study**
Michel Carrier, MD, Michel Pellerin, MD, Pierre L. Pagé, MD, Norman R. Searle, MD, Raymond Martineau, MD, Claire Caron, Perf, B. Charles Solymoss, MD, and L. Conrad Pelletier, MD

113 **Rupture of the Ascending Aorta Caused by Blunt Trauma**
Peter J. Symbas, MD, W. Stewart Horsley, MD, and Panagiotis N. Symbas, MD

118 **Critical Cerebral Perfusion Pressure During Tepid Heart Operations in Dogs**
Walter Plöchl, MD, David J. Cook, MD, Thomas A. Orszulak, MD, and Richard C. Daly, MD

Invited Commentary
Arthur S. Keats, MD

125 **Impact of Gender on Coronary Bypass Operative Mortality**
Fred H. Edwards, MD, Joseph S. Carey, MD, Frederick L. Grover, MD, Joseph W. Bero, MS, and Renee S. Hartz, MD

132 **Reduction of Neurologic Injury After High-Risk Thoracoabdominal Aortic Operation**
Lars G. Svensson, MD, PhD, Kenneth R. Hess, PhD, Richard S. D'Agostino, MD, Michael H. Entrup, MD, Kinan Hreib, MD, Wendy A. Kimmel, CCP, Edward Nadolny, CCP, and David M. Shahian, MD

139 **Minimally Invasive Saphenous Vein Harvesting: Endothelial Integrity and Early Clinical Results**
David G. Cable, MD, Joseph A. Dearani, MD, Eric A. Pfeifer, MD, Richard C. Daly, MD, and Hartzell V. Schaff, MD

144 **Influence of Age-Specific Lung Function on Survival After Coronary Bypass**
Charles C. Canver, MD, Ronald D. Nichols, CCP, and George M. Kroncke, MD

148 **Inhibition of the Pacemaker Current: A Bradycardic Therapy for Off-Pump Coronary Operations**
Alain Bel, MD, Louis P. Perrault, MD, PhD, Bouchaib Faris, MD, Christian Mouas, Jean-Paul Vilaine, MD, and Philippe Menasché, MD, PhD

153 **Aprotinin in Pediatric Cardiac Operations: A Benefit in Complex Malformations and With High-Dose Regimen Only**
Thierry P. Carrel, MD, Mike Schwanda, MD, Paul R. Vogt, MD, and Marko I. Turina, MD

159 **Acute Functional Consequences of Left Ventriculotomy**
Louis R. DiBernardo, MD, Paul M. Kirshbom, MD, Lynne A. Skaryak, MD, Renee L. Quarterman, MD, Ronald L. Johnson, Mark J. Davies, FRCS, J. William Gaynor, MD, and Ross M. Ungerleider, MD

166 **Heparin-Coated Bypass Circuits: Effects on Inflammatory Response in Pediatric Cardiac Operations**
Hedi H. Schreurs, EKP, Marianne J. Wijers, EKP, Y. John Gu, MD, PhD, Wim van Oeveren, PhD, Ron T. van Domburg, MSc, Johan H. de Boer, MD, and Ad J. J. C. Bogers, MD, PhD

172 **Repair of Congenital Tricuspid Valve Abnormalities With Artificial Chordae Tendineae**
V. Mohan Reddy, MD, Doff B. McElhinney, MD, Michael M. Brook, MD, Norman H. Silverman, MD, Paul Stanger, MD, and Frank L. Hanley, MD

177 **Delayed Cardioplegic Reoxygenation Reduces Reoxygenation Injury in Cyanotic Immature Hearts**
Kai Ihnken, MD, Kiyozo Morita, MD, and Gerald D. Buckberg, MD

ORIGINAL ARTICLES: GENERAL THORACIC

183 **Early Pulmonary Resection for Localized *Mycobacterium avium* Complex Disease**
Yuji Shiraishi, MD, Kanae Fukushima, MD, Hikotaro Komatsu, MD, and Atsuyuki Kurashima, MD

187 **Multicenter VATS Experience With Mediastinal Tumors**
Todd L. Demmy, MD, Mark J. Krasna, MD, Frank C. Detterbeck, MD, Gary G. Kline, MD, Leslie J. Kohman, MD, Malcolm M. DeCamp, Jr, MD, and John C. Wain, MD

193 **Superior Sulcus (Pancoast) Tumor: Experience With 105 Patients**
Safuh Attar, MD, Mark J. Krasna, MD, Joshua R. Sonett, MD, John R. Hankins, MD, Robert G. Slawson, MD, Charles M. Suter, PhD, and Joseph S. McLaughlin, MD

199 **Lung Retransplantation in Children**
Charles B. Huddleston, MD, Eric N. Mendeloff, MD, Alan H. Cohen, MD, Stuart C. Sweet, MD, David T. Balzer, MD, and George B. Mallory, Jr, MD

205 **Origin of Regenerated Epithelium in Cryopreserved Tracheal Allotransplantation**
Takahiro Mukaida, MD, Nobuyoshi Shimizu, MD, Motoi Aoe, MD, Akio Andou, MD, Hiroshi Date, MD, and Shigeharu Moriyama, MD

209 **Tracheal Replacement With Cryopreserved Tracheal Allograft: Experiment in Dogs**
Takashi Tojo, MD, Kazuo Niwaya, MD, Noriyoshi Sawabata, MD, Keiji Kushibe, MD, Kunimoto Nezu, MD, Sigeki Taniguchi, MD, and Soichiro Kitamura, MD

214 **Surgical Treatment of Hepatic and Pulmonary Metastases From Colorectal Cancers**
Jean-Francois Regnard, MD, Dominique Grunenwald, MD, Lorenzo Spaggiari, MD, PhD, Philippe Girard, MD, Dominique Elias, MD, Michel Ducreux, MD, Pierre Baldeyrou, MD, and Philippe Levasseur, MD

Invited Commentary
Jonathan C. Nesbitt, MD

220 **Predictive Respiratory Complication Quotient Predicts Pulmonary Complications in Thoracic Surgical Patients**
Jose A. Melendez, MD, and Rafael Barrera, MD

225 **Addition of Aprotinin to Organ Preservation Solutions Decreases Lung Reperfusion Injury**
Randall F. Roberts, MD, Garabed P. Nishanian, MD, Joseph N. Carey, BS, Sevak H. Darbinian, MD, Jong D. Kim, MD, Yasushi Sakamaki, MD, Jerry Y. Chang, BS, Vaughn A. Starnes, MD, and Mark L. Barr, MD

231 **Resection of Pulmonary Metastases in Six Patients With Disease-Free Interval Greater Than 10 Years**
Mitsuhiro Kamiyoshihara, MD, Toshikazu Hirai, MD, Osamu Kawashima, MD, and Yasuo Morishita, MD

234 **Surgery for Invasive Primary Mediastinal Tumors**
Emile A. Bacha, MD, Alain R. Chapelier, MD, PhD, Paolo Macchiarini, MD, Elie Fadel, MD, and Philippe G. Dartevelle, MD

Invited Commentary
Lawrence H. Einhorn, MD

CASE REPORTS

240 **Skeletonized Right Gastroepiploic Artery Used for Coronary Artery Bypass Grafting**
Piervincenzo Gagliardotto, MD, Philippe Coste, MD, Mokhtar Lazreg, MD, and Vincent Dor, MD

242 **Cephalad Resuspension of Aortic Leaflet of the Mitral Valve in Hypertrophic Obstructive Cardiomyopathy**
Jacques A. M. van Son, MD, PhD, Robert H. Anderson, MD, and Friedrich W. Mohr, MD, PhD

244 **Absent Pulmonary Valve Syndrome With Interrupted Aortic Arch**
Carmelo Mignosa, MD, Dirk G. Wilson, MRCP, Andrew Wood, FRCR, C. Richard Kirk, FRCP, and Francesco Musumeci, MD

247 **Traumatic Left Ventricular Aneurysm and Tricuspid Insufficiency in a Child**
Ramesh S. Veeragandham, MD, Carl L. Backer, MD, Constantine Mavroudis, MD, and Allen D. Wilson, MD

248 **Video-Assisted Cardioscopy for Left Ventricular Thrombectomy in a Child**
Ida L. Mazza, MD, Jeffrey P. Jacobs, MD, Abdulwahab Aldousany, MD, Anthony C. Chang, MD, and Redmond P. Burke, MD

251 **Unilateral Absence of Pulmonary Artery and Ventricular Septal Defect in an Infant**
Kazuhito Imanaka, MD, Susumu Shimizu, MD, Jun Matsumoto, MD, Kohei Hashizume, MD, Keiji Tsuchiya, MD, and Tamiko Takemura, MD

253 **Treatment of a Persistent Postoperative Chylothorax With Somatostatin**
Peter C. Rimensberger, MD, Beatrice Müller-Schenker, MD, Afksendiyos Kalangos, MD, PhD, and Maurice Beghetti, MD

254 **Left Atrial Reduction for Chronic Atrial Fibrillation Associated With Mitral Valve Disease**
N. Madhu Sankar, MS, PhD, and Alan E. Farnsworth, FRACS

Invited Commentary
Hans Gerd Fieguth, MD

256 **Endoscopic Placement of Stents in Aneurysms of the Descending Thoracic Aorta**
J. Honório Palma, MD, Antonio C. Carvalho, MD, Enio Buffolo, MD, Dirceu R. Almeida, MD, Walter J. Gomes, MD, and Luiz A. Brasil, MD

258 **Surgical Management of Spontaneous Left Main Coronary Artery Dissection**
Patricia A. Thistlethwaite, MD, PhD, Riyad Y. Tarazi, MD, Frank J. Giordano, MD, and Stuart W. Jamieson, FRCS

260 **Transcatheter Closure of an Extracardiac Fontan Fenestration**
Evan M. Zahn, MD, Anthony C. Chang, MD, Redmond P. Burke, MD, and Jeffrey P. Jacobs, MD

263 **Reconstruction of the Aortic Arch in Invasive Thymoma Under Retrograde Cerebral Perfusion**
Shozo Fujino, MD, Noriaki Tezuka, MD, Shoji Watarida, MD, Kazuhiko Katsuyama, MD, Shuhei Inoue, MD, and Atsumi Mori, MD

264 **One-Stage Repair of Interrupted Aortic Arch, Aortopulmonary Window, and Anomalous Origin of Right Pulmonary Artery With Autologous Tissues**
Massimiliano Codispoti, MD, and Pankaj S. Mankad, FRCS(C/Th)

267 **Combined Mitral and Aortic Homograft Valve Replacement for Acute Bacterial Endocarditis**
Roberto Amado-Cattaneo, MD

268 **Cardiopulmonary Bypass in a Gravid Patient: Perioperative Changes in Endothelin Levels**
James L. Zellner, MD, Scott B. Kribbs, BS, B. Hugh Dorman, MD, PhD, and Francis G. Spinale, MD, PhD

270 **Autograft From Quadrangular Resection for Floppy Valve Repair in Endocarditis**
Alfonso Penta de Peppo, MD, Jacob Zeitani, MD, Ruggero De Paulis, MD, and Luigi Chiariello, MD

HOW TO DO IT

272 **Trapdoor Thoracotomy as a Surgical Approach for Aortic Arch Aneurysm**
Takao Imazeki, MD, Takashi Yamada, MD, Yoshihito Irie, MD, Yasushi Katayama, MD, and Hiroshi Kiyama, MD

275 **Modified Biatrial Approach for the Extensive Resection of Left Atrial Myxomas**
Massimo Massetti, MD, Gerard Babatasi, MD, PhD, Olivier Le Page, MD, Satar Bhoyroo, MD, and Andre Khayat, MD

277 **Closure of Short, Wide Patent Ductus Arteriosus With Cardiopulmonary Bypass and Balloon Occlusion**
Bassam O. Omari, MD, Shelly Shapiro, MD, Leonard Ginzton, MD, Jeffrey C. Milliken, MD, and Fritz J. Baumgartner, MD

279 **Modified Incision for Long Saphenous Vein Harvest**
Andrew Chukwuemeka, FRCS, and Lindsay John, FRCS

280 **Implantation Technique of Aortic Homograft Root: Emphasis on Matching the Host Root to the Graft**
William F. Northrup III, MD, and Vibhu R. Kshettry, MD

COLLECTIVE REVIEW

285 **Recurrent Cardiac Myxoma: Seeding or Multifocal Disease?**
Amihay Shinfeld, MD, Takahiro Katsumata, MD, and Stephen Westaby, FRCS

KEY REFERENCES

289 **The Diaphragm**
Darroch W. O. Moores, MD

UPDATE

291 **Superior Vena Caval Reconstruction Using Autologous Pericardium**
William H. Warren, MD, William J. Piccione, Jr, MD, and L. Penfield Faber, MD

Invited Commentary
Alain R. Chapelier, MD, PhD

CTSNet

294 **CTSNet: Building Bridges Between National Societies**
Bruce E. Keogh, FRCS

CORRESPONDENCE

296 **Delayed Sternal Closure**
Adrian J. Levine, FRCS, Babulal Sethia, FRCS, and William J. Brawn, FRCS

296 **Muscle Flap Transfer or Omental Transfer for Treatment of Poststernotomy Mediastinitis**
Yoshio Misawa, MD, PhD, and Katsuo Fuse, MD, PhD

Reply
Ahmed El Gamel, FRCS

297 **Sternal Closure and Muscle Flaps for Mediastinitis**
J. Ernesto Molina, MD, PhD

Reply
Ahmed El Gamel, FRCS

298 **Does Propofol Alter the Gas Exchange in Membrane Oxygenators?**
Nader Nader-Djalal, MD, Wiam Z. Khadra, PhD, CCP, Wendy Spaulding, CCP, and Anthony L. Panos, MD

299 **Outpatient Chest Tubes**
Kieran G. McManus, FRCS(I), Gary M. Spence, FRCS(I), and James A. McGuigan, FRCS(Ed)

Reply
Ronald B. Ponn, MD, and John A. Federico, MD

300 **Improved Selection of Winners: A Working Hypothesis for Neoadjuvant Chemotherapy**
Gilbert Massard, MD, Romain Kessler, MD, and Jean-Marie Wihlm, MD

301 **Topical Hypothermia and Diaphragmatic Paralysis**
Gerald S. Weinstein, MD

Reply
Dimitri J. Nikas, MD, and John A. Elefteriades, MD

303 **Intrathoracic Subclavian Artery Cannulation as an Alternative to Femoral or Axillary Artery Cannulation**
Joseph D. Whitlark, MD, and Francis P. Sutter, DO

303 **Is It Justified to Ignore Oncologic Principles During VATS Major Lung Resections?**
Lorenzo Spaggiari, MD, PhD, Paolo Carbognani, MD, PhD, Piergiorgio Solli, MD, and Michele Rusca, MD

Reply
Ralph J. Lewis, MD, Robert J. Caccavale, MD, Glenn E. Sisler, MD, and Jean-Philippe Bocage, MD

304 **Avoidance of Sternal Nonunion With Cyanoacrylate Gluing**
M. Murat Demirtaş, MD, Murat Akçar, MD, and Sabit Sarikaya, MD

Reply
John C. Opie, MD

306 **Prevention of Gastrointestinal Bleeding After a Cardiac Operation**
Olivier A. Stchepinsky, MD, Yves V. Theodose, MD, Jean-Paul D. Huisman, MD, Yvon M. Gaultier, MD, and Hans C. Maas, MD

307 **Previous CABG Is Not a Risk Factor for Aortic Valve Replacement**
Malcolm J. R. Dalrymple-Hay, PhD, FRCS, Shahid A. Sami, FRCS, Steve A. Livesey, FRCS, and James L. Monro, FRCS

Reply
Thoralf M. Sundt III, MD, and William A. Gay, Jr, MD

308 **Systemic Air Embolism in Laser Operations**
Keith Stoneback

308 **Postpneumonectomy Contralateral Thoracotomy for Carcinoma**
Raymond A. Dieter, Jr, MD

Reply
Lorenzo Spaggiari, MD, PhD, and Dominique Grunenwald, MD

310 **Small Left Ventricles and Biventricular Repairs**
Pietro A. Abbruzzese, MD, Donato Montemurro, MD, and Maria Teresa Cascarano, MD

CORRECTION

310 **Selzman CH, Whitehill TA, Shames BD, Pulido EJ, Cain BS, Harken AH. The Biology of Estrogen-Mediated Repair of Cardiovascular Injury. Ann Thorac Surg 1998;65:868–74**

ANNOUNCEMENTS

A-32 **Forthcoming Articles**

A-33, A-34 **Information for Authors**

A-35 **Guidelines for the Submission of Electronic Manuscripts**

A-36–38 **Events of Interest**

32 **The Society of Thoracic Surgeons: Thirty-fifth Annual Meeting**

87 **Important Announcement for Authors**

94, 293 **Notice From the American Board of Thoracic Surgery**

112 **1999 Thoracic Surgery Foundation Grants, Fellowships, and Awards**

131 **The Thoracic Surgery Foundation for Research and Education: Planned Giving Opportunities**

138 Notice From the Southern Thoracic Surgical Association

158 Understanding the New World of Health Care

171 Important Announcement

219 Discussion Groups on the Internet

274 *The Annals of Thoracic Surgery* Cumulative Index

A-39 Information About Membership in The Society of Thoracic Surgeons

A-40, A-41 Call for Abstracts, The Society of Thoracic Surgeons

A-42 Disclosure Form for Presenters and Authors

A-43, A-44 Classified Advertisements

A-50 Index to Advertisers

Number 2 August 1998

EDITORIAL

311 **Effects of Cardioplegic Solutions on Vasoreactivity of the Internal Mammary Artery**
Paul J. Pearson, MD, PhD, and Hartzell V. Schaff, MD

ORIGINAL ARTICLES: GENERAL THORACIC

313 **Nitric Oxide Downregulates Lung Macrophage Inflammatory Cytokine Production**
Daniel R. Meldrum, MD, Brian D. Shames, MD, Xianzhong Meng, MD, PhD, David A. Fullerton, MD, Robert C. McIntyre, Jr, MD, Frederick L. Grover, MD, and Alden H. Harken, MD

318 **Transbronchial Gene Transfer of Endothelial Nitric Oxide Synthase to Transplanted Lungs**
Anders Jeppsson, MD, Carlo Pellegrini, MD, Timothy O'Brien, MD, PhD, Virginia M. Miller, PhD, Henry D. Tazelaar, MD, and Christopher G. A. McGregor, FRCS

325 **Results of Operation in *Mycobacterium avium-intracellulare* Lung Disease**
Kenwyn G. Nelson, MD, David E. Griffith, MD, Barbara A. Brown, MS, and Richard J. Wallace, Jr, MD

Invited Commentary
Marvin Pomerantz, MD

331 **Outcome of Medicare Patients With Emphysema Selected for, but Denied, a Lung Volume Reduction Operation**
Bryan F. Meyers, MD, Roger D. Yusen, MD, Stephen S. Lefrak, MD, G. Alexander Patterson, MD, Mary S. Pohl, BSN, Veronica J. Richardson, BSN, and Joel D. Cooper, MD

337 **Lung Transplantation for Cystic Fibrosis: Effective and Durable Therapy in a High-Risk Group**
Thomas M. Egan, MD, Frank C. Detterbeck, MD, Michael R. Mill, MD, Kristi K. Gott, RN, Jean B. Rea, RN, Judy McSweeney, RN, Robert M. Aris, MD, and Linda J. Paradowski, MD

347 **Zenker's Diverticulum in the Elderly: Is Operation Justified?**
Donald G. Crescenzo, MD, Victor F. Trastek, MD, Mark S. Allen, MD, Claude Deschamps, MD, and Peter C. Pairolero, MD

351 **Recombinant Kunitz Protease Inhibitor Ameliorates Reperfusion Injury in Rat Lung Transplantation**
Itaru Nagahiro, MD, Tyler White, PhD, Motoki Yano, MD, Carlos H. R. Boasquevisque, MD, Masafumi Hiratsuka, MD, Joel D. Cooper, MD, and G. Alexander Patterson, MD

356 **Effect of Blood Transfusion on Survival After Esophagogastrectomy for Carcinoma**
Stewart R. Craig, FRCS, Donald J. Adam, FRCS, Peng Lee Yap, FRCPath, H. Anne Leaver, PhD, Robert A. Elton, PhD, Evan W. J. Cameron, FRCS, Christopher T. M. Sang, FRCS, and William S. Walker, FRCS

362 **Evaluation of 18-Hour Lung Preservation With Oxygenated Blood for Optimal Oxygen Delivery**
Kou Takigami, MD, Shigeyuki Sasaki, MD, Norihiko Shiiya, MD, Masakazu Kawasaki, MD, Eriho Takeuchi, MD, and Keishu Yasuda, MD

367 **Prospective, Randomized Comparison of Extrapleural Versus Epidural Analgesia for Postthoracotomy Pain**
Andreas M. Kaiser, MD, Andreas Zollinger, MD, Diego De Lorenzi, MD, Felix Largiadèr, MD, and Walter Weder, MD

ORIGINAL ARTICLES: CARDIOVASCULAR

373 **Integrilin Prevents Prolonged Bleeding Times After Cardiopulmonary Bypass**
Yasuyuki Suzuki, MD, Priscilla Hillyer, BSE, Shinji Miyamoto, MD, Stefan Niewiarowski, MD, PhD, Ling Sun, MD, A. Koneti Rao, MD, Stanley Hollenbach, BS, and L. Henry Edmunds, Jr, MD

382 **Adenosine-Enhanced Ischemic Preconditioning Decreases Infarct in the Regional Ischemic Sheep Heart**
Masahisa Uematsu, MD, Glenn R. Gaudette, MSc, Jari O. Laurikka, MD, Sidney Levitsky, MD, and James D. McCully, PhD

388 **Surgical Management of Ascending and Aortic Arch Disease: Refined Techniques With Improved Results**
Cary L. Stowe, MD, Mary A. Baertlein, BSN, Mercedes D. Wierman, MSN, Michael Rucker, PA-C, and George Ebra, EdD

396 **Replacing the Atherosclerotic Ascending Aorta Is a High-Risk Procedure**
Robert C. King, MD, R. Chai Kanithanon, BA, Kimberly S. Shockey, MS, William D. Spotnitz, MD, Curtis G. Tribble, MD, and Irving L. Kron, MD

402 **Operation for Acute and Chronic Aortic Dissection: Recent Outcome With Regard to Neurologic Deficit and Early Death**
Hazim J. Safi, MD, Charles C. Miller III, PhD, Michael J. Reardon, MD, Dimitrios C. Iliopoulos, MD, George V. Letsou, MD, Rafael Espada, MD, and John C. Baldwin, MD

412 **Aortic Allograft Implantation Techniques: Pathomorphology and Regurgitant Jet Patterns by Doppler Echocardiographic Studies**
Tineke P. Willems, MD, Lex A. Van Herwerden, MD, PhD, Meindert A. Taams, MD, PhD, Veronica E. Kleyburg-Linker, Jos R. T. C. Roelandt, MD, PhD, and Egbert Bos, MD, PhD

417 **Preconditioning With Cromakalim Improves Long-Term Myocardial Preservation for Heart Transplantation**
Matthias Kirsch, MD, Christophe Baufreton, MD, PhD, Christine Fernandez, PharmD, Séverine Brunet, MD, Fabien Pasteau, MS, Alain Astier, PhD, and Daniel Y. Loisance, MD

425 **Aortic Valve Replacement With the Biocor PSB Stentless Xenograft**
Paolo Bertolini, MD, Giovanni Battista Luciani, MD, Barbara Vecchi, MD, Peppino Pugliese, MD, and Alessandro Mazzucco, MD

431 **Minimal-Access Aortic and Valvular Operations, Including the "J/j" Incision**
Lars G. Svensson, MD, PhD, and Richard S. D'Agostino, MD

436 **Na^+/H^+ Exchange Inhibition Improves Long-Term Myocardial Preservation**
Yong-In L. Kim, MD, Paul Herijgers, MD, Sarra K. Laycock, PhD, Alfons Van Lommel, PhD, Eric Verbeken, MD, and Willem J. Flameng, MD, PhD

443 **Up to Eight Years' Follow-up of 997 Patients Receiving the CarboMedics Prosthetic Heart Valve**
Arnt E. Fiane, MD, Odd R. Geiran, MD, PhD, and Jan L. Svennevig, MD, PhD

449 **Inhibitory Effect of Photooxidation on Intimal and Medial Thickening of Saphenous Vein**
Jyotirmay Chanda, MD, Ryosei Kuribayashi, MD, Ke-Xiang Liu, MD, and Yoshiki Shibata, MD

455 **Mechanical Properties of Human Saphenous Veins From Normotensive and Hypertensive Patients**
Veronica Milesi, PhD, Alejandro Rebolledo, BSc, Felix Ayala Paredes, MD, Nora Sanz, MD, Juan Tommasi, MD, Gustavo J. Rinaldi, MD, and Angela O. Grassi, MD

462 **Cold Blood Cardioplegia or Intermittent Cross-Clamping in Coronary Artery Bypass Grafting?**
Zhiyong Liu, MD, Oswaldo Valencia, MD, Tom Treasure, FRCS, and Andrew J. Murday, FRCS

466 **Effects of Cardioplegic Solutions on the Vasoreactivity of the Internal Mammary Artery**
Catherine I. Chardigny, MD, Victor A. Jebara, MD, Tony J. Verbeuren, PhD, Alain F. Carpentier, MD, PhD, and Jean-Noël Fabiani, MD

471 **Temporary Luminal Arteriotomy Seal: II. Coronary Artery Bypass Grafting on the Beating Heart**
Robin H. Heijmen, MD, Cornelius Borst, MD, PhD, Rob van Dalen, MSc, Cees W. J. Verlaan, Chantal M. Mouës, MD, Yvonne J. M. van der Helm, and Paul F. Gründeman, MD, PhD

477 **Coronary Bypass Flow During Use of Intraaortic Balloon Pumping and Left Ventricular Assist Device**
Takeo Tedoriya, MD, Michio Kawasuji, MD, Naoki Sakakibara, MD, Hirofumi Takemura, MD, Yoh Watanabe, MD, and Roland Hetzer, MD, PhD

482 **Vivostat System Autologous Fibrin Sealant: Preliminary Study in Elective Coronary Bypass Grafting**
Henrik K. Kjaergard, MD, and Horace R. Trumbull, MD

487 **Beneficial Effects of Angiotensin-Converting Enzyme Inhibitors During Acute Revascularization**
Harold L. Lazar, MD, Charles Volpe, MD, Yusheng Bao, MD, Samuel Rivers, BS, Joseph A. Vita, MD, and John F. Keaney, Jr, MD

Invited Commentary
Frank W. Sellke, MD

493 **Experience With Antegrade Bihemispheric Cerebral Perfusion in Aortic Arch Operations**
Ramesh S. Veeragandham, MD, Ian N. Hamilton, Jr, MD, Christopher O'Connor, MD, Vincenzo Rizzo, CCP, and Hassan Najafi, MD

500 **Adrenomedullin in Patients at High Risk for Pulmonary Hypertension**
Palaniswamy Vijay, PhD, Laszlo Szekely, MD, Thomas G. Sharp, MD, Andrew Miller, BPh, Ko Bando, MD, and John W. Brown, MD

506 **A 26-Year Experience With Surgical Management of Tetralogy of Fallot: Risk Analysis for Mortality or Late Reintervention**
Christopher J. Knott-Craig, MD, Ronald C. Elkins, MD, Mary M. Lane, PhD, Jeannie Holz, RN, Carolyn McCue, RN, and Kent E. Ward, MD

512 **Effects of Modified and Classic Blalock-Taussig Shunts on the Pulmonary Arterial Tree**
François Godart, MD, Shakeel A. Qureshi, FRCP, Ary Simha, MD, Philip B. Deverall, MD, David R. Anderson, MD, Edward J. Baker, MD, and Michael Tynan, MD

Invited Commentary
Jeffrey P. Gold, MD

519 **Neonatal Mechanical Bridging to Total Orthotopic Heart Transplantation**
Michael Weyand, MD, Deniz Kececioglu, MD, Hans G. Kehl, MD, Christof Schmid, MD, Heinz M. Loick, MD, Johannes Vogt, MD, and Hans H. Scheld, MD

523 **Total Cavopulmonary Anastomosis (Fontan) in Children With Down's Syndrome**
Rosalie M. Campbell, MB BCh, Ian Adatia, MB ChB, Robert M. Gow, MD, Gary D. Webb, MD, William G. Williams, MD, and Robert M. Freedom, MD

527 **Upregulated and Downregulated Transcription of Myocardial Genes After Pulmonary Artery Banding in Pigs**
Erwin P. Bauer, MD, Satoru Kuki, MD, Rene Zimmermann, PhD, and Wolfgang Schaper, MD, PhD

532 **Decreased Exhaled Nitric Oxide May Be a Marker of Cardiopulmonary Bypass–Induced Injury**
Maurice Beghetti, MD, Philip E. Silkoff, MRCP, Marlova Caramori, MD, Helen M. Holtby, MD, Arthur S. Slutsky, MD, and Ian Adatia, MB ChB

535 **Hematologic and Economic Impact of Aprotinin in Reoperative Pediatric Cardiac Operations**
Bruce E. Miller, MD, Steven R. Tosone, MD, Vincent K. H. Tam, MD, Kirk R. Kanter, MD, Nina A. Guzzetta, MD, James M. Bailey, MD, PhD, and Jerrold H. Levy, MD

Invited Commentary
Celia C. D'Errico, DO, and Edward L. Bove, MD

542 **Pulmonary Function After One-Lung Ventilation in Newborns: The Basis for Neonatal Thoracoscopy**
Martin Tönz, MD, Denis Bachmann, MD, Daniel Mettler, DVM, and Georges Kaiser, MD

CASE REPORTS

547 **Mediastinal Germ Cell Tumor in a Child With Precocious Puberty and Klinefelter Syndrome**
Gregory G. Bebb, MD, Frederic W. Grannis, Jr, MD, Isaac B. Paz, MD, Marilyn L. Slovak, PhD, and Robert Chilcote, MD

549 **Alternative to Reconstruction of the Pulmonary Outflow Tract in the Ross Procedure**
Kiyofumi Morishita, MD, PhD, Tomio Abe, MD, PhD, Johji Fukada, MD, Hiroki Sato, MD, PhD, and Cikara Shiiku, MD

550 **Delayed Presentation of Foreign Body Reaction Secondary to Retained Pacing Wires**
Darryl A. Chung, FRCS, and Edward E. J. Smith, FRCS

552 **Thoracic Splenosis**
James V. O'Connor, MD, Christopher Coleman Brown, MD, Jared K. Thomas, MD, James Williams, MD, and Eugene Wallsh, MD

553 **Successful Removal of Massive Cardiac Neurilemoma With Cardiopulmonary Bypass**
Takehisa Hashimoto, MD, Shoji Eguchi, MD, Takashi Nakayama, MD, Hajime Ohzeki, MD, and Jun-ichi Hayashi, MD

555 **Recovery From End-Stage Ischemic Cardiomyopathy During Long-Term LVAD Support**
Lars Pietsch, MD, Horst Laube, MD, Gerd Baumann, MD, PhD, and Wolfgang Konertz, MD, PhD

557 **Intraabdominal Hemorrhage During Combined Coronary Artery Bypass and Carotid Endarterectomy**
Seiichi Noda, MD, Michael J. Buckmaster, MD, Charles W. Hogue, Jr, MD, Brian G. Rubin, MD, and Thoralf M. Sundt III, MD

559 **Fetal Cardiac Tamponade Due to an Intrapericardial Teratoma**
Tim Tollens, MD, Filip Casselman, MD, Hugo Devlieger, MD, PhD, Marc H. Gewillig, MD, PhD, Kamiel Vandenberghe, MD, Toni E. Lerut, MD, PhD, and Willem J. Daenen, MD

560 **Isolated Tricuspid Regurgitation Caused by a Dilated Tricuspid Annulus**
Akira Marui, MD, Takaaki Mochizuki, MD, Norimasa Mitsui, MD, Tadaaki Koyama, MD, and Mayumi Horibe, MD

562 **Paradoxical Embolism of a Shotgun Pellet**
John S. Ikonomidis, MD, PhD, Steven J. Nisco, MD, David H. Liang, MD, PhD, and Robert C. Robbins, MD

564 **Combined Therapies for Composite Graft Infection After Bentall's Procedure**
Tamaki Takano, MD, Yukio Fukaya, MD, Hirofumi Nakano, MD, Hideo Kuroda, MD, and Jun Amano, MD

566 **Infection With *Mycobacterium tuberculosis* Complicating a Pulmonary Sequestration**
Stefano Elia, MD, Marco Alifano, MD, Maria Gentile, MD, Pasquale Somma, MD, Francesco P. D'Armiento, MD, and Giovanni Ferrante, MD

567 **Cardiopulmonary Bypass With Danaparoid Sodium and Ancrod in Heparin-Induced Thrombocytopenia**
Robin R. Kanagasabay, FRCS, M. Jonathan Unsworth-White, FRCS, Grant Robinson, MRCPath, David Bevan, MRCPath, Gillian Farnsworth, FRCA, Elizabeth J. Haxby, FRCA, and Edward E. J. Smith, FRCS

569 **Hemothorax in Type I Neurofibromatosis**
George P. Teitelbaum, MD, Richard J. Hurvitz, MD, and Barry C. Esrig, MD

571 **Management of Recurrent Ventricular Tachycardia With Ventricular Assist Device Placement**
David M. Kulick, MD, R. Morton Bolman III, MD, Christopher T. Salerno, MD, Alan J. Bank, MD, and Soon J. Park, MD

573 **Transesophageal Echocardiographic Evaluation of Perioperative Coronary Sinus Trauma**
Nancy C. Poirier, MD, Patricia Ugolini, MD, Michel Pellerin, MD, Robert Petitclerc, MD, and Jean-Claude Tardif, MD

HOW TO DO IT

576 **Off-Pump Coronary Bypass Grafting: How to Use the Octopus Tissue Stabilizer**
Erik W. L. Jansen, MD, PhD, Jaap R. Lahpor, MD, PhD, Cornelius Borst, MD, PhD, Paul F. Gründeman, MD, PhD, and Johan J. Bredée, MD, PhD

580 **Training Model for "Beating-Heart" Coronary Artery Anastomoses**
Mohammad Bashar Izzat, FRCS(CTh), M. Hazem El-Zufari, MD, and Anthony P. C. Yim, MD

582 **Muscle-Sparing Anterior Thoracotomy for One-Stage Bilateral Lung Volume Reduction Operation**
Marc de Perrot, MD, Marc Licker, MD, and Anastase Spiliopoulos, MD

Invited Commentary
Sudhir Sundaresan, MD

Invited Commentary
Walter Klepetko, MD

586 **Pericardial Closure Using Fascia Lata in Patients Undergoing Pneumonectomy With Pericardiectomy**
Yoshihiko Kageyama, MD, Kazuya Suzuki, MD, Kozo Matsushita, MD, Hiroshi Nogimura, MD, and Teruhisa Kazui, MD

588 **Modified Subclavian Flap Aortoplasty for Coarctation Repair in Patients Less Than Three Months of Age**
Miki Asano, MD, Akira Mishima, MD, Shigeki Yamamoto, MD, Takayuki Saito, MD, and Tadao Manabe, MD

590 **Axillary Thoracoscopy**
Michael W. Frank, MD, Carl L. Backer, MD, Constantine Mavroudis, MD, and Axel W. Joob, MD

CURRENT REVIEW

592 **Minimally Invasive Management for First and Recurrent Pneumothorax**
Gilbert Massard, MD, Pascal Thomas, MD, and Jean-Marie Wihlm, MD

CORRESPONDENCE

600 **If I Were a Young Thoracic Surgeon . . .**
Robert W. Jamplis, MD

600 **Coarctation With Valvular Lesions In Adults**
Stephen C. Clark, FRCS, Joseph Zacharias, FRCS, J. R. Leslie Hamilton, FRCS(C/TH), and Asif Hasan, FRCS(C/TH)

601 **Postoperative Mediastinitis and β-Adrenergic Drugs**
Aitizaz Uddin Syed, FRCS, Ahmed Al Watidy, FRCS, and Reida M. El Oakley, FRCS

Reply
Catarina Y. Bitkover, MD, and Bengt Gårdlund, PhD

602 **Sternal Dehiscence in Poststernotomy Mediastinitis**
Yoshio Misawa, MD, PhD, and Katsuo Fuse, MD, PhD

Reply
Catarina Y. Bitkover, MD, and Bengt Gårdlund, PhD

603 **Ascending Versus Descending Balloon Counterpulsation**
Harold L. Lazar, MD

603 **Aortic Coarctation Associated With Aortic or Mitral Valve Disease: Which Lesion to Correct First?**
Francesco Musumeci, MD, and William J. Penny, MD

604 **Pneumoperitoneum for Prolonged Air Leaks After Lower Lobectomies**
Paolo Carbognani, MD, PhD, Lorenzo Spaggiari, MD, PhD, Piergiorgio Solli, MD, and Michele Rusca, MD

Reply
John R. Handy, Jr, MD

605 **Recurrence of the Mediastinal Growing Teratoma Syndrome**
Gilbert Massard, MD, Françoise Eichler, MD, Bernard Gasser, MD, Jean-Pierre Bergerat, MD, and Jean-Marie Wihlm, MD

Reply
George J. Bosl, MD

606 **Operation on the Thoracic Aorta**
E. Regis Jucá, MD

Reply
Irving L. Kron, MD

607 **Percutaneous Drainage of Pericardial Cyst With Right-Sided Heart Failure**
Basem Shabb, MD, Maurice Khuri, MD, and Maurice Haddad, MD

Reply
Adrian C. Borges, MD, Christian Witt, MD, and Gert Baumann, MD

Reply
Arthur F. Ng, MD

608 **A Simple Method of Aortic Root Venting for CABG**
Aaron R. Casha, FRCS, and Venkat Chandrasekaran, FRCS(C/Th)

609 **Aortic Root Hemorrhage and Presealed Composite Grafts With Porous Sewing Cuffs**
David A. Browdie, MD, and R. Varick Bernstein, MD

Reply
Jack G. Copeland, MD

Reply
Alan D. Hilgenberg, MD

610 **Air Leaks and Pleural Spaces After Lung Volume Reduction**
Julian A. Smith, FRACS

Reply
Roger D. Yusen, MD, and Benjamin Littenberg, MD

Reply
John R. Handy, Jr, MD

611 **Modern Management of Traumatic Rupture of the Aortic Isthmus**
James W. Pate, MD

Reply
Roberto Galli, MD

612 **Left Atrial Catheter Removal**
Yoav Paz, MD, Amihay Shinfeld, MD, Jonathan Tsehori, MD, and Aram K. Smolinsky, MD

SUPPLEMENT: 1½ VENTRICLE REPAIRS

613 **Workshop on "One and One-Half Ventricle Repairs"**

615 **Introduction**
Carlo F. Marcelletti, MD, and Fiore S. Iorio, MD

616 **What is a Ventricle?**
Robert H. Anderson, MD, and Siew Yen Ho, PhD

621 **Which Hearts Are Unsuitable for Biventricular Correction?**
Robert H. Anderson, MD, and Siew Yen Ho, PhD

627 **Echocardiography of Hypoplastic Ventricles**
Norman H. Silverman, MD, and Doff B. McElhinney, MD

634 **Which Two Ventricles Cannot Be Used for a Biventricular Repair? Echocardiographic Assessment**
Norman H. Silverman, MD, and Doff B. McElhinney, MD

641 **Biventricular Hearts Not Amenable to Biventricular Repair**
Robert M. Freedom, MD, and Glen S. Van Arsdell, MD

644 **The Pathology of Subaortic Obstruction**
Robert H. Anderson, MD, and Siew Yen Ho, PhD

649 **Subaortic Obstruction and the Fontan Operation**
Robert M. Freedom, MD

653 **Atrioventricular Valve Dysfunction: Evaluation by Doppler and Cross-Sectional Ultrasound**
Norman H. Silverman, MD, and Doff B. McElhinney, MD

659 **Cavopulmonary Anastomosis in Staging Toward Fontan Operation: Pathologic Substrates**
Annalisa Angelini, MD, Carla Frescura, MD, Giovanni Stellin, MD, and Gaetano Thiene, MD

664 **The Physiology of the Bidirectional Cavopulmonary Connection**
Robert M. Freedom, MD, David Nykanen, MD, and Lee N. Benson, MD

668 **Additional Pulmonary Blood Flow With the Bidirectional Glenn Anastomosis: Does It Make a Difference?**
Doff B. McElhinney, MD, Stefano M. Marianeschi, MD, and V. Mohan Reddy, MD

673 **Pathologic Substrates for 1½ Ventricular Repair**
Robert H. Anderson, MD, and Siew Yen Ho, PhD

678 **A Practical Approach to 1½ Ventricle Repairs**
Glen S. Van Arsdell, MD, William G. Williams, MD, and Robert M. Freedom, MD

681 **Total Anomalous Pulmonary Venous Connections and Consideration of the Fontan or One-Ventricle Repair**
Robert M. Freedom, MD, and Aijaz Hashmi, MD

683 **Anomalous Pulmonary Venous Return in the Staged Palliation of Functional Univentricular Heart Defects**
Doff B. McElhinney, MD, and V. Mohan Reddy, MD

688 **Pulmonary Arteriovenous Malformations In and Out of the Setting of Congenital Heart Disease**
Stefano M. Marianeschi, MD, Doff B. McElhinney, MD, and V. Mohan Reddy, MD

692 **Consensus Statement on Hypoplastic and Rudimentary Ventricles: Morphology, Angiography, and Echocardiography**
Carlo F. Marcelletti, MD, and Fiore S. Iorio, MD

ANNOUNCEMENTS

A-27, A-28 **Information for Authors**

A-29 **Guidelines for the Submission of Electronic Manuscripts**

A-30–32 **Events of Interest**

A-34 **Forthcoming Articles**

350 ***The Annals of Thoracic Surgery* Cumulative Index**

381 **The Society of Thoracic Surgeons: Thirty-fifth Annual Meeting**

416 **Discussion Groups on the Internet**

430 **Notice From the Southern Thoracic Surgical Association**

461, 531 **Notice From the American Board of Thoracic Surgery**

A-35 **Information About Membership in The Society of Thoracic Surgeons**

A-36, A-37 **Classified Advertisements**

A-42 **Index to Advertisers**

Number 3 September 1998

SPECIAL ANNOUNCEMENT

693 **American Board of Thoracic Surgery: Changes in the Recertification Requirements Effective in the Year 2001**
Marvin Pomerantz, MD

EDITORIALS

694 **Thoracic Surgeons and Tobacco: Past Failures and Present Opportunity**
Frederic W. Grannis, Jr, MD

697 **Complementary Use of Antegrade and Retrograde Cardioplegia**
Gabriel S. Aldea, MD

ORIGINAL ARTICLES: CARDIOVASCULAR

699 **Aortic Valve Replacement for Octogenarians: Are Small Valves Bad?**
Benjamin Medalion, MD, Bruce W. Lytle, MD, Patrick M. McCarthy, MD, Robert W. Stewart, MD, Kristopher L. Arheart, EdD, John H. Arnold, MD, Floyd D. Loop, MD, and Delos M. Cosgrove III, MD

707 **Mitral Valve Replacement: Randomized Trial of St. Jude and Medtronic Hall Prostheses**
Andrew C. Fiore, MD, Hendrick B. Barner, MD, Marc T. Swartz, BA, Lawrence R. McBride, MD, Arthur J. Labovitz, MD, Kathy J. Vaca, RN, Jan St. Vrain, RDCS, Gary L. Grunkemeier, PhD, and George C. Kaiser, MD

714 **Bilateral Radial Artery Grafts in Coronary Reconstruction: Technique and Early Results in 261 Patients**
James Tatoulis, FRACS, Brian F. Buxton, FRACS, and John A. Fuller, FRACP

721 **Left Ventricular Functional Improvement After Transmyocardial Laser Revascularization**
Keith A. Horvath, MD, Rodney Greene, BS, Noam Belkind, Bonnie Kane, BS, David D. McPherson, MD, and David A. Fullerton, MD

726 **Preconditioning During Simulated MIDCABG Attenuates Blood Flow Defects and Neutrophil Accumulation**
Bradley L. Bufkin, MD, Steven T. Shearer, BS, Jakob Vinten-Johansen, PhD, Ignacio G. Duarte, MD, Vinod H. Thourani, MD, Masanori Nakamura, MD, Zhi-Qing Zhao, PhD, and Robert A. Guyton, MD

733 **Inhibition of Inducible Nitric Oxide Synthase After Myocardial Ischemia Increases Coronary Flow**
Patrick E. Parrino, MD, Victor E. Laubach, PhD, John R. Gaughen, Jr, BA, Kimberly S. Shockey, MS, Terri-Ann Wattsman, MD, Robert C. King, MD, Curtis G. Tribble, MD, and Irving L. Kron, MD

740 **Preoperative Predictors of Cost in Medicare-Age Patients Undergoing Coronary Artery Bypass Grafting**
Kathleen M. Longo, MD, Mark E. Cowen, MD, Morris A. Flaum, MD, Paola Valsania, MD, M. Anthony Schork, PhD, Leslie A. Wagner, MS, and Richard L. Prager, MD

747 **Modifying Risk for Extracorporeal Circulation: Trial of Four Antiinflammatory Strategies**
John Parker Gott, MD, William A. Cooper, MD, Frank E. Schmidt, Jr, MD, W. Morris Brown III, MD, Carolyn E. Wright, MS, John D. Merlino, MD, James D. Fortenberry, MD, W. Scott Clark, PhD, and Robert A. Guyton, MD

755 **Myocardial Protection During Antegrade Versus Retrograde Cardioplegia**
Päivi K. Kaukoranta, MD, Martti V. K. Lepojärvi, MD, Kai T. Kiviluoma, MD, PhD, Kari V. Ylitalo, MD, and Keijo J. Peuhkurinen, MD, PhD

762 **Mitral Valve Replacement With the St. Jude Medical Prosthesis: A 15-Year Follow-up**
Jean-Paul Remadi, MD, Philippe Bizouarn, MD, Olivier Baron, MD, Oussama Al Habash, MD, Phillipe Despins, MD, Jean-Luc Michaud, MD, and Daniel Duveau, MD

768 **The Adenosine-Triphosphate–Sensitive Potassium-Channel Opener Pinacidil Is Effective in Blood Cardioplegia**
Jennifer S. Lawton, MD, Peng-Wie Hsia, PhD, and Ralph J. Damiano, Jr, MD

774 **Operation for Chronic Traumatic Aortic Aneurysm: When and How?**
Takahiro Katsumata, MD, PhD, Amihay Shinfeld, MD, and Stephen Westaby, FRCS

779 **Early and Late Risk Factors in Surgical Treatment of Acute Type A Aortic Dissection**
Stefano Pansini, MD, Pier Vincenzo Gagliardotto, MD, Esmeralda Pompei, MD, Francesco Parisi, MD, Gianluca Bardi, MD, Enzo Castenetto, MD, Fulvio Orzan, MD, and Michele di Summa, MD

785 **A Dual-Vent Left Heart Deairing Technique Markedly Reduces Carotid Artery Microemboli**
F. Paget Milsom, FRACS, and Simon J. Mitchell, MB, ChB

792 **Fibrinolysis-Adjusted Perioperative Low-Dose Aprotinin Reduces Blood Loss in Bypass Operations**
Martin Misfeld, MD, Sven Dubbert, Sawas Eleftheriadis, MD, Hans-Joachim Siemens, MD, Thomas Wagner, PhD, and Hans-Hinrich Sievers, MD

Invited Commentary
Roque Pifarré, MD

800 **Operative Results After the Cox/Maze Procedure Combined With a Mitral Valve Operation**
Hiroshi Izumoto, MD, Kohei Kawazoe, MD, Hiroto Kitahara, MD, and Junya Kamata, MD

805 **Fifth-Year Hemodynamic Performance of the Prima Stentless Aortic Valve**
Xu Y. Jin, MD, Kumud Dhital, FRCS, Kausik Bhattacharya, FRCS, Rajeeva Pieris, FRCS, Naomali Amarasena, MRCP, and Ravi Pillai, FRCS

810 **Surgical Experience With Intracardiac Myxomas: Long-Term Follow-up**
Anil Bhan, MCh, Ramji Mehrotra, MCh, Shiv Kumar Choudhary, MCh, Rajesh Sharma, MCh, Dorairaj Prabhakar, DM, Balram Airan, MCh, Arkalgud Sampath Kumar, MCh, and Panangipalli Venugopal, MCh

814 **Gene Transfer to Vein Graft Wall by HVJ–Liposome Method: Time Course and Localization of Gene Expression**
Hong-zhi Bai, MD, Yoshiki Sawa, MD, Wei-da Zhang, MD, Tomoyuki Yamakawa, MD, Ryuichi Morishita, MD, Yasufumi Kaneda, MD, and Hikaru Matsuda, MD

Invited Commentary
Zhengyu Luo, MD, and Jeffrey M. Isner, MD

821 **Effect of Modified Ultrafiltration in High-Risk Patients Undergoing Operations for Congenital Heart Disease**
Ko Bando, MD, Mark W. Turrentine, MD, Palaniswamy Vijay, PhD, Thomas G. Sharp, MD, Yasuo Sekine, MD, Brian J. Lalone, CCP, Laszlo Szekely, MD, and John W. Brown, MD

829 **Primum Atrial Septal Defect in Children: Early Results, Risk Factors, and Freedom From Reoperation**
Hani K. Najm, MD, William G. Williams, MD, Suphachai Chuaratanaphong, MD, Stefan B. Watzka, MD, John G. Coles, MD, and Robert M. Freedom, MD

836 **Does Banding the Pulmonary Artery Affect Pulmonary Valve Function After the Damus-Kaye-Stansel Operation?**
Zahid Amin, MD, Carl L. Backer, MD, C. Elise Duffy, MD, and Constantine Mavroudis, MD

842 **Arterial Switch in Hearts With Left Ventricular Outflow and Pulmonary Valve Abnormalities**
Young-Sang Sohn, MD, Christian P. R. Brizard, MD, Andrew D. Cochrane, FRACS, James L. Wilkinson, FRCP, Carlos Mas, MD, and Tom R. Karl, MD

849 **Homograft Replacement of Mitral Valve in Children**
Mark D. Plunkett, MD, Douglas J. Schneider, MD, Jitendra J. Shah, MD, Stephen E. Bash, MD, Linda M. Bond, MA, and Dale M. Geiss, MD

Invited Commentary
Jose M. Revuelta, MD

853 **Video-Assisted Thoracoscopic Ligation of Patent Ductus Arteriosus: Safe and Outpatient**
Michael H. Hines, MD, Andrew S. Bensky, MD, John W. Hammon, Jr, MD, and D. Glenn Pennington, MD

860 **Validation of Relative Value Scale for Congenital Heart Operations**
Kathy J. Jenkins, MD, Kimberlee Gauvreau, ScD, Jane W. Newburger, MD, Ludmila B. Kyn, MA, Lisa I. Iezzoni, MD, and John E. Mayer, MD

870 **Association Between Age and Blood Loss in Children Undergoing Open Heart Operations**
Glyn D. Williams, FFA(SA), Susan L. Bratton, MD, Elizabeth C. Riley, BA, and Chandra Ramamoorthy, FRCA

Invited Commentary
Joanne Guay, FRCP(C), and Jean-François Hardy, FRCP(C)

ORIGINAL ARTICLES: GENERAL THORACIC

877 **Controlled Reperfusion Prevents Pulmonary Injury After 24 Hours of Lung Preservation**
Ari O. Halldorsson, MD, Michael Kronon, MD, Bradley S. Allen, MD, Shaikh Rahman, MS, Tingrong Wang, MD, Michael Layland, BS, and Douglas Sidle, BS

886 **Detection of Extrathoracic Metastases by Positron Emission Tomography in Lung Cancer**
Walter Weder, MD, Ralph A. Schmid, MD, Helke Bruchhaus, MD, Sven Hillinger, MD, Gustav K. von Schulthess, MD, and Hans C. Steinert, MD

894 **Leiomyosarcoma of the Esophagus: Results of Surgical Treatment**
Gaetano Rocco, MD, Victor F. Trastek, MD, Claude Deschamps, MD, Mark S. Allen, MD, Daniel L. Miller, MD, and Peter C. Pairolero, MD

898 **Lobectomy Improves Ventilatory Function in Selected Patients With Severe COPD**
Robert J. Korst, MD, Robert J. Ginsberg, MD, Maneesh Ailawadi, MD, Manjit S. Bains, MD, Robert J. Downey, Jr, MD, Valerie W. Rusch, MD, and Diane Stover, MD

903 **Isolated Lung Liposome-Mediated Gene Transfer Produces Organ-Specific Transgenic Expression**
Richard Lee, MD, Carlos H. R. Boasquevisque, MD, Mariano M. Boglione, MD, Masafumi Hiratsuka, MD, Ronald K. Scheule, PhD, Joel D. Cooper, MD, and G. Alexander Patterson, MD

908 **Reoperative Pulmonary Metastasectomy for Sarcomatous Pediatric Histologies**
Barbara K. Temeck, MD, Leonard H. Wexler, MD, Seth M. Steinberg, PhD, Linda L. McClure, RN, Marc A. Horowitz, MD, and Harvey I. Pass, MD

914 **Standardized Clinical Care Pathways for Major Thoracic Cases Reduce Hospital Costs**
Kenton J. Zehr, MD, Patty B. Dawson, RN, Stephen C. Yang, MD, and Richard F. Heitmiller, MD

920 **Axillary Lymph Node Metastases From Bronchogenic Carcinoma**
Marc Riquet, MD, Françoise Le Pimpec-Barthes, MD, and Claire Danel, MD

923 **Endoscopic Treatment of Postoperative Bronchopleural Fistula: Experience With 45 Cases**
Peter H. Hollaus, MD, Franz Lax, MD, PhD, Dan Janakiev, MD, Paolo Lucciarini, MD, Elfi Katz, MD, Alois Kreuzer, MD, and Nestor S. Pridun, MD

Invited Commentary
Helmut W. Unruh, MD

CASE REPORTS

928 **Tracheal Mucoepidermoid Carcinoma in a 7-Year-Old Child**
Seiichi Noda, MD, Sudhir Sundaresan, MD, and Eric N. Mendeloff, MD

929 **An Unexpected Complication After Harvesting of the Radial Artery for Coronary Artery Bypass Grafting**
Joseph Nunoo-Mensah, FRCS

931 **Interleukin-6 and "Complex" Cardiac Myxoma**
Yoshihiko Mochizuki, MD, Yoshitaka Okamura, MD, Hiroshi Iida, MD, Hideaki Mori, MD, and Kouichiro Shimada, MD

933 **Extracardiac Fontan Operation With Tube Fenestration Allowing Transcatheter Coil Occlusion**
Shubhayan Sanatani, MD, Suvro S. Sett, MD, Derek G. Human, BM, BCh, J. A. Gordon Culham, MD, and Jacques G. LeBlanc, MD

935 **Absent Aortic Valve: Successful Palliation in the Neonate**
Yorikazu Harada, MD, Takamasa Takeuchi, MD, Gengi Satomi, MD, and Satoshi Yasukouchi, MD

936 **Successful Repair of Aortoesophageal Fistula Secondary to Traumatic Pseudoaneurysm**
Talat S. Chughtai, MD, and Nathan M. Sheiner, MD

938 **Surgical Retrieval of an Embolized Central Venous Catheter in a Premature Baby**
Pietro A. Abbruzzese, MD, Enrico Chiappa, MD, Pierclaudio Murru, MD, Lino Stefanini, MD, Stefano Longo, MD, and Robert Balagna, MD

939 **Tracheal Obstruction in Achalasia: A Role for Airway Stenting?**
Richard G. Berrisford, FRCS(CTh), Aung Oo, FRCS, Martin J. Walshaw, FRCP, and Michael J. Drakeley, FRCS

941 **A Taste of Chinese Medicine!**
Mohammad Bashar Izzat, FRCS(CTh), Anthony P. C. Yim, MD, and M. Hazem El-Zufari, MD

942 **Double-Outlet Right Ventricle With Complete Atrioventricular Canal**
Michiaki Imamura, MD, PhD, Jonathan J. Drummond-Webb, FCS(SA), George E. Sarris, MD, Daniel J. Murphy, Jr, MD, and Roger B. B. Mee, FRACS

944 **Surgical Resection of Lung Cancer Originating in a Tracheal Bronchus**
Jhingook Kim, MD, ChoungKyu Park, MD, Hojoong Kim, MD, and Kyung Soo Lee, MD

946 **Surgical Management of Superior Vena Caval Syndrome in Sarcoidosis**
Deepak Narayan, MD, Louis Brown, MD, and John O. Thayer, MD

948 **Inflammatory Pseudotumors of the Lung**
Christos Alexiou, FRCS, Zbigniev Obuszko, MD, David Beggs, FRCS, and William E. Morgan, FRCS

950 **Purposeful Delay in the Repair of a Traumatic Rupture of the Aorta With Coexistent Liver Injury**
James W. Klena, MD, Ehyal Shweiki, MD, Edward L. Woods, MD, and Matthew Indeck, MD

952 **Tophaceous Pseudogout of the Mitral Valve**
Marc R. Moon, MD, James I. Fann, MD, Prakash C. Deedwania, MD, Rollington Ferguson, MD, Jon C. Kosek MD, and Thomas A. Burdon, MD

954 **Cardiomyoplasty After Implantation of a Pacemaker and Cardioverter/Defibrillator**
Valeri S. Chekanov, MD, PhD, Sanjay Deshpande, MD, David Francischelli, MS, Paul Werner, MD, Deborah Waller, RN, and Donald H. Schmidt, MD

HOW TO DO IT

957 **Reversible Snaring for Proper Prosthetic Seating During Valve Replacement**
Fritz J. Baumgartner, MD, Bassam O. Omari, MD, Lillia Stuart, RN, Jeffrey C. Milliken, MD, Ronald J. Nelson, MD, and John M. Robertson, MD

959 **Advancement Flaps to Treat Superfical Wound Infections After Cardiac Operations**
Giuseppe Rescigno, MD, Miguel Sousa Uva, MD, Richard Raffoul, MD, Marcio Scorsin, MD, and Arrigo Lessana, MD

961 **Hybrid-Type Stabilizer for Off-Pump Direct Coronary Artery Bypass Grafting**
Toshio Konishi, MD, Kazuhiko Higuchi, MD, Mutumu Fukata, MD, Shinji Akisima, MD, and Shoji Fukuda, MD

963 **Improved Visualization in Minimally Invasive Coronary Bypass Grafting**
Simon P. Hoerstrup, MD, Mario L. Lachat, MD, Gregor Zünd, MD, Paul R. Vogt, MD, and Marko I. Turina, MD

965 **Counteracting Paradoxical Motion in Videoendoscopic Operations**
Anthony P. C. Yim, MD, Mohammad Bashar Izzat, FRCS(CTh), and Tak Wai Lee, FRCS(E)

966 **Accurate Length Adjustment of Aortocoronary Saphenous Vein Bypass Grafts**
Aurangzeb Durrani, FRCS, Eugene K. W. Sim, FRCS, and Robert T. Grignani, IBDip

CURRENT REVIEW

968 **Coronary Artery Bypass Grafting in Patients With Cerebrovascular Disease**
Harold L. Lazar, MD, and James O. Menzoian, MD

KEY REFERENCES

975 **Circulatory Support Devices for Bridge to Recovery**
Tofy Mussivand, PhD, Paul J. Hendry, MD, Roy G. Masters, MD, Kevin S. Holmes, and Wilbert J. Keon, MD

UPDATE

977 **Skeletal Muscle Ventricles in the Pulmonary Circulation: Up to 16 Weeks' Experience**
Larry W. Stephenson, MD

CORRESPONDENCE

980 **Severe Truncal Valve Dysplasia: Association With DiGeorge Syndrome?**
Bruno Marino, MD, Maria Christina Digilio, MD, and Bruno Dallapiccola, MD

Editor's Note

980 **What Is "Minimally Invasive"?**
Fritz J. Baumgartner, MD, Ali Gheissari, MD, George P. Panagiotides, MD, Eli R. Capouya, MD, and Taro Yokoyama, PhD

Reply
Hermann Reichenspurner, MD, PhD

981 **Severe Postoperative Hemorrhage After Neoadjuvant Chemotherapy for Invasive Thymoma**
Federico Venuta, MD, Erino A. Rendina, MD, Tiziano De Giacomo, MD, Anna Maria Ciccone, MD, and Giorgo Furio Coloni, MD

982 **Angioscopic Pulmonary Embolectomy and ECMO**
Koji Kowahito, MD, PhD, Seiichiro Murata, MD, Takashi Ino, MD, and Katsuo Fuse, MD, PhD

Reply
Hitoshi Ohteki, MD, Kohjiro Furukawa, MD, and Hiroyuki Onishi, MD

983 **Omental Transplantation for Vascular Myelopathy Caused by an Aortic Operation**
Hernando Rafael, MD

Reply
Aquilino Hurlé, MD, Patricio Llamas, MD, Juan Meseguer, MD, and Juan A. Casillas, MD

984 **Why Aren't Valve Sizers and Prostheses Labeled Accurately?**
Lawrence I. Bonchek, MD

Reply
Claus Bartels, MD, PhD, and Hans-Hinrich Sievers, MD, PhD

985 **How High Should Mammary Artery Be Harvested for the Minimally Invasive Approach?**
Toshiya Ohtsuka, MD

Reply
Jacob Bergsland, MD, and Tomas A. Salerno, MD

Reply
Antonio M. Calafiore, MD

987 **Retrograde Autologous Priming Reduces Blood Use**
William J. DeBois, CCP, and Todd K. Rosengart, MD

Reply
Oz M. Shapira, MD

988 **Surgical Procedure for Bilateral Lung and Liver Hydatid Cysts**
Nurettin Karaoğlanoğlu, MD, Atilla Eroğlu, MD, and K. Yalçın Polat, MD

Reply
Rajinder S. Dhaliwal, MCh, and Maninder S. Kalkat, MCh

989 **Repeated Pulmonary Metastasectomy**
John A. Odell, FRCS(Ed)

Reply
Daniela Kandioler-Eckersberger, MD

REVIEW OF RECENT BOOKS

962 **Cardiothoracic Interrelationships in Clinical Practice, edited by Anthony M. Cosentino, MD, and Richard J. Martin, MD**
Mark T. Metzdorff, MD

976 **Drug Therapy in Cardiothoracic Surgery, edited by Pieter A. van Zwieten and Leon Eijsman**
James W. Fredericksen, MD

ANNOUNCEMENTS

A-42 **Forthcoming Articles**

A-43, A-44 **Information for Authors**

A-45 **Guidelines for the Submission of Electronic Manuscripts**

A-46–48 **Events of Interest**

706, 979 **Notice From the American Board of Thoracic Surgery**

754 **The Society of Thoracic Surgeons: Thirty-fifth Annual Meeting**

820 **The Thoracic Surgery Foundation for Research and Education**

869 ***The Annals of Thoracic Surgery* Cumulative Index**

897 **Notice From the Southern Thoracic Surgical Association**

956 **New Requirements for Recertification in the Year 2001**

974 **Discussion Groups on the Internet**

990 **Program of the Forty-fifth Annual Meeting of the Southern Thoracic Surgical Association**

A-49, A-50 **Classified Advertisements**

A-60 **Index to Advertisers**

MINIMALLY INVASIVE CARDIAC SURGERY SUPPLEMENT

995 **Facts and Myths of Minimally Invasive Cardiac Surgery: Current Trends in Thoracic Surgery IV**

997 **Introduction**
Hani Shennib, MD

998 **The LAST Operation: Techniques and Results Before and After the Stabilization Era**
Antonio M. Calafiore, MD, Giuseppe Vitolla, MD, Valerio Mazzei, MD, Giovanni Teodori, MD, Gabriele Di Giammarco, MD, Teresa Iovino, MD, and Angela Iaco´, MD

1002 **Safety and Cost-Effectiveness of MIDCABG in High-Risk CABG Patients**
Dario F. Del Rizzo, MD, PhD, W. Douglas Boyd, MD, Richard J. Novick, MD, F. Neil McKenzie, MD, Nemish D. Desai, and Alan H. Menkis, MD

1008 **Left Anterior Descending Coronary Artery Bypass Grafting Through Minimal Thoracotomy**
Ernesto Weinschelbaum, MD, Carlos Rodríguez, MD, Mariana Lelia Cabello, MD, Alfonso Dos Santos, MD, Alejandro Machain, MD, Alejandro Bertolotti, MD, and Hugo Fraguas, MD

1012 **Thoracoscopic Harvest of the Internal Thoracic Artery: A Multicenter Experience in 218 Cases**
Francis G. Duhaylongsod, MD, William R. Mayfield, MD, and Randall K. Wolf, MD

1018 **Minimally Invasive Surgical Treatment of Coronary Artery Multivessel Disease**
Vassilios Gulielmos, MD, Michael Knaut, MD, Romuald Cichon, MD, Michael Brandt, Thorsten Jost, MD, Klaus Matschke, MD, and Stephan Schüler, MD

1022 **Minimally Invasive Coronary Artery Bypass Grafting Without Cardiopulmonary Bypass: Early Experience and Follow-up**
Anno Diegeler, MD, Volkmar Falk, MD, Merajoddin Matin, MD, Roberto Battellini, MD, Thomas Walther, MD, Rüdiger Autschbach, MD, PhD, and Friedrich W. Mohr, MD, PhD

1026 **Minimally Invasive Saphenous Vein Harvesting**
Rohinton J. Morris, MD, Michael T. Butler, PA, and Louis E. Samuels, MD

1029 **Feasibility Study of a Mechanical Suturing Device for Less Invasive Mitral Operations**
Ching-Tsorng Huang, MD, Francis G. Duhaylongsod, MD, William R. Burfeind, Jr, MD, Chia-Hsun Lin, MD, Tetsuro Morota, MD, PhD, and Tetsuji Kawata, MD, PhD

1032 **Coronary Artery Bypass on the Beating Heart With the Octopus: A North American Experience**
Ted H. Spooner, MD, Peter E. Dyrud, MD, Bjorn K. Monson, MD, Ginny E. Dixon, CNOR, and Len D. Robinson, CCRN

1036 **Minimally Invasive Coronary Artery Bypass Grafting: Port-Access Approach Versus Off-Pump Techniques**
Hermann Reichenspurner, MD, PhD, Dieter H. Boehm, MD, PhD, Armin Welz, MD, Christoph Schmitz, MD, Stephen Wildhirt, MD, Costas Schulze, MD, Bruno Meiser, MD, Albert Schütz, MD, and Bruno Reichart, MD

1041 **Facilitated Vascular Anastomoses: The One-Shot Device**
Patrick Nataf, MD, Peter Hinchliffe, Scott Manzo, BSME, James Simpson, MD, Wolff M. Kirsch, MD, Yong Hua Zhu, MD, and Toomas Anton, MD

1045 **Beyond Stents: Third-Generation Coronary Devices**
Stephen N. Oesterle, MD

1050 **Less Invasive Cardiac Operations Through a Median Sternotomy: 100 Consecutive Cases**
Massimo Massetti, MD, Gerard Babatasi, MD, PhD, Anne Lotti, MD, Satar Bhoyroo, MD, Olivier Le Page, MD, and Andre Khayat, MD

1055 **Arterial Graft Patency in Coronary Artery Bypass Grafting: What Do We Really Know?**
Michael J. Mack, MD, John A. Osborne, MD, PhD, and Hani Shennib, MD

1060 **Computer-Assisted Telemanipulation: An Enabling Technology for Endoscopic Coronary Artery Bypass**
Hani Shennib, MD, Amr Bastawisy, MD, Michael J. Mack, MD, and Frederic H. Moll, MD

1064 **Robotically Assisted Microsurgery for Endoscopic Coronary Artery Bypass Grafting**
Edward R. Stephenson, Jr, MD, Sachin Sankholkar, MS, Christopher T. Ducko, MD, and Ralph J. Damiano, Jr, MD

1068 **Off-Pump Multivessel Coronary Bypass via Sternotomy Is Safe and Effective**
John D. Puskas, MD, Carolyn E. Wright, MS, Russell S. Ranson, MD, W. Morris Brown III, MD, John Parker Gott, MD, and Robert A. Guyton, MD

1073 **Minimally Invasive Coronary Revascularization in Elderly Patients**
Hartmut Oster, MD, Jürgen Graff, MD, Wigand Knake, MD, and Ralf Widera, MD

1076 **Beating Heart Operations Including Hybrid Revascularization: Initial Experiences**
Friedrich-Christian Riess, MD, Joachim Schofer, MD, Peter Kremer, MD, Andreas G. Riess, Heinz Bergmann, MD, Sina Moshar, MD, Detlef Mathey, MD, and Niels Bleese, MD

1082 **Left Ventricular Geometry and Cardiac Function During Minimally Invasive Coronary Artery Bypass Grafting**
Michael J. Jurmann, MD, Ares K. Menon, MD, Leo Haeberle, MD, Schahriah Salehi-Gilani, MD, and Gerhard Ziemer, MD

1087 **Role of Graft Flow Measurement Technique in Anastomotic Quality Assessment in Minimally Invasive CABG**
Saad F. Jaber, MD, Steven C. Koenig, PhD, Bobby BhaskerRao, MD, Daniel J. VanHimbergen, BA, Patricia B. Cerrito, PhD, Daniel J. Ewert, PhD, Laman A. Gray, Jr, MD, and Paul A. Spence, MD

1093 **Myocardial Damage After Minimally Invasive Coronary Artery Bypass Grafting on the Beating Heart**
Johannes Bonatti, MD, Herbert Hangler, MD, Christoph Hörmann, MD, Johannes Mair, MD, Jürgen Falkensammer, MD, and Peter Mair, MD

1097 **Transit-Time Flow Measurement for Detection of Early Graft Failure During Myocardial Revascularization**
Beat H. Walpoth, MD, Andreas Bosshard, MS, Igor Genyk, MD, Beat Kipfer, MD, Pascal A. Berdat, MD, Otto M. Hess, MD, Ulrich Althaus, MD, and Thierry P. Carrel, MD

1101 **Minimally Invasive Valve Surgery Versus the Conventional Approach**
Denton A. Cooley, MD

1106 **Valve Operations Through a Minimally Invasive Approach**
Ernesto Weinschelbaum, MD, Pablo Stutzbach, MD, Alejandro Machain, MD, Roberto Favaloro, MD, Victor Caramutti, MD, Alejandro Bertolotti, MD, and Hugo Fraguas, MD

1110 **"J" Incision Minimal-Access Valve Operations**
Lars G. Svensson, MD, PhD, and Richard S. D'Agostino, MD

1113 **Transmyocardial Laser as an Adjunct to Minimally Invasive CABG for Complete Myocardial Revascularization**
Naresh Trehan, MD, Yugal Mishra, PhD, Yatin Mehta, MD, and Dhan Raj Jangid, MD

1119 **Should Smart Operators Mix Business and Surgery?**
Stephen Klaidman

Number 4 October 1998

ORIGINAL ARTICLES: GENERAL THORACIC

1121 **Evaluation of Treatment Modalities for Thoracic Empyema: A Cost-Effectiveness Analysis**
Vinod H. Thourani, MD, Kevin M. Brady, MD, Kamal A. Mansour, MD, Joseph I. Miller, Jr, MD, and Robert B. Lee, MD

1128 **Operation and Photodynamic Therapy for Pleural Mesothelioma: 6-Year Follow-up**
Thomas L. Moskal, MD, Thomas J. Dougherty, PhD, John D. Urschel, MD, Joseph G. Antkowiak, MD, Anne-Marie Regal, MD, Deborah L. Driscoll, BA, and Hiroshi Takita, MD

1134 **Comparison of Staged Thoracoscopy and Median Sternotomy for Lung Volume Reduction**
Stephen R. Hazelrigg, MD, Theresa M. Boley, MSN, Mitchell J. Magee, MD, Carl H. Lawyer, MD, and Joseph Q. Henkle, MD

1140 **Lung Cancer in Women Compared With Men: Stage, Treatment, and Survival**
Denise Ouellette, MD, Geneviève Desbiens, MD, Claude Emond, MsC, and Gilles Beauchamp, MD

Invited Commentary
Kathy S. Albain, MD

1145 **Balance of Proinflammatory and Antiinflammatory Cytokines at Thoracic Cancer Operation**
Darryl M. Atwell, MD, Katherine P. Grichnik, MD, Mark F. Newman, MD, Joseph G. Reves, MD, and William T. McBride, MD

1151 **Repair of Congenital Sternal Cleft in Infants and Adolescents**
José Ribas M. de Campos, MD, Luiz T. B. Filomeno, MD, Angelo Fernandez, MD, Raul Lopes Ruiz, MD, Hélio Minamoto, MD, Eduardo de Campos Werebe, MD, and Fabio B. Jatene, MD

1155 **Is Video-Assisted Thoracoscopic Lobectomy a Unified Approach?**
Anthony P. C. Yim, MD, Rodney J. Landreneau, MD, Mohammad Bashar Izzat, FRCS(CTh), Alex L. K. Fung, BA, and Song Wan, MD, PhD

1159 **Prognostic Significance of HER-2/neu Overexpression in Stage I Adenocarcinoma of Lung**
Chih-Cheng Hsieh, MD, Kuan-Chih Chow, PhD, Huei-Jyh Fahn, MD, Chun-Ming Tsai, MD, Wing-Yin Li, MD, Min-Hsiung Huang, MD, and Liang-Shun Wang, MD

Invited Commentary
David H. Harpole, Jr, MD

1165 **Completion Pneumonectomy: Analysis of Operative Mortality and Survival**
Filip E. Muysoms, MD, Aart Brutel de la Rivière, MD, PhD, Joseph J. Defauw, MD, Karl M. Dossche, MD, Paul J. Knaepen, MD, Henry A. van Swieten, MD, PhD, and Jules M. M. van den Bosch, MD, PhD

1170 **Videothoracoscopic Lung Biopsy in Diffuse Infiltrative Lung Diseases: A 5-Year Surgical Experience**
Rachid Zegdi, MD, Jacques Azorin, MD, Bruno Tremblay, MD, Marie Dominique Destable, MD, Paul S. Lajos, MD, and Dominique Valeyre, MD

1174 **Cold Abscess of the Chest Wall: A Surgical Entity?**
Eric Faure, MD, Redha Souilamas, MD, Marc Riquet, MD, Antoine Chehab, MD, Françoise Le Pimpec-Barthes, MD, Dominique Manac'h, MD, and Bernard Debesse, MD

Invited Commentary
Dov Weissberg, MD

ORIGINAL ARTICLES: CARDIOVASCULAR

1179 **Circulatory Arrest Under Moderate Systemic Hypothermia and Cold Retrograde Cerebral Perfusion**
Yaron Moshkovitz, MD, Tirone E. David, MD, Michael Caleb, MD, Christopher M. Feindel, MD, and Mauro P. L. de Sa, MD

1185 **Controlled Intermittent Asystole: Pharmacologic Potentiation of Vagal-Induced Asystole**
Bradley L. Bufkin, MD, John D. Puskas, MD, Jakob Vinten-Johansen, PhD, Steven T. Shearer, BS, and Robert A. Guyton, MD

1191 **Endothelial Sodding of the Permaflow Prosthetic Coronary Artery Bypass Conduit**
Michael R. Phillips, MD, Hiroki Yamaguchi, MD, Virginia M. Miller, PhD, Stuart Williams, PhD, James J. Morris, MD, and Hartzell V. Schaff, MD

1198 **Inaccurate and Misleading Valve Sizing: A Proposed Standard for Valve Size Nomenclature**
George T. Christakis, MD, Karen J. Buth, MSc, Bernard S. Goldman, MD, Stephen E. Fremes, MD, Vivek Rao, MD, Gideon Cohen, MD, Michael A. Borger, MD, and Richard D. Weisel, MD

1204 **Effect of Extended Cross-Clamp Time During Thoracoabdominal Aortic Aneurysm Repair**
Hazim J. Safi, MD, Anders Winnerkvist, MD, Charles C. Miller III, PhD, Dimitrios C. Iliopoulos, MD, Michael J. Reardon, MD, Rafael Espada, MD, and John C. Baldwin, MD

1210 **Heparin Preserves Nitric Oxide Activity in Coronary Endothelium During Ischemia-Reperfusion Injury**
Peter C. Kouretas, MD, PhD, Young D. Kim, MD, Paul A. Cahill, PhD, Adam K. Myers, PhD, Lam N. To, BSc, Yi-Ning Wang, MD, Robert B. Wallace, MD, Irving L. Kron, MD, and Robert L. Hannan, MD

1216 **Recombinant Human Megakaryocyte Growth and Development Factor Attenuates Postbypass Thrombocytopenia**
Masanori Nakamura, MD, Christopher F. Toombs, PhD, Ignacio G. Duarte, MD, Russell S. Ronson, MD, L. Susan Schmarkey, BS, Sara L. Katzmark, BS, Jill Robinson, BS, Dirck L. Dillehay, PhD, Jakob Vinten-Johansen, PhD, and Robert A. Guyton, MD

1224 **Morbidity, Cost, and Six-Month Outcome of Minimally Invasive Direct Coronary Artery Bypass Grafting**
James A. Magovern, MD, Daniel H. Benckart, MD, Rodney J. Landreneau, MD, Tamara Sakert, CCP, and George J. Magovern, Jr, MD

1230 **Rapid-Staged Strategy for Concomitant Critical Carotid and Left Main Coronary Disease With Left Ventricular Dysfunction: IABP Use**
David E. Allie, MD, Mitchell Lirtzman, MD, Arshed P. Malik, MD, Joseph M. Kowalski, MD, Esmond A. Barker, MD, and Craig M. Walker, MD

1236 **Minimally Invasive Mammary Artery Doppler Flow Velocity Evaluation in Minimally Invasive Coronary Operations**
Antonio M. Calafiore, MD, Sabina Gallina, MD, Angela Iacò, MD, Giovanni Teodori, MD, Teresa Iovino, MD, Gabriele Di Giammarco, MD, Valerio Mazzei, MD, and Giuseppe Vitolla, MD

Invited Commentary
Mohammad Bashar Izzat, FRCS(CTh)

1242 **Recognition and Management of Catheter-Induced Pulmonary Artery Rupture**
Michael H. Mullerworth, MBBS, Peter Angelopoulos, BAppSc, Melanie A. Couyant, BSc, Alison M. Horton, CCP, Susan M. Robinson, MBBS, Oscar U. Petring, MD, Peter J. Mitchell, MBBS, and Jeffrey J. Presneill, MBBS

1246 **High-Flow Gas Insufflation to Facilitate MIDCABG: Effects on Coronary Endothelium**
William R. Burfeind, Jr, MD, Francis G. Duhaylongsod, MD, Brian H. Annex, MD, and David Samuelson, BA

1250 **Brain Damage After Aortic Arch Repair Using Selective Cerebral Perfusion**
Mikio Ohmi, MD, Koichi Tabayashi, MD, Masaki Hata, MD, Hitoshi Yokoyama, MD, PhD, Mitsuaki Sadahiro, MD, and Haruo Saito, MD

1254 **A National Study of Postoperative Mortality Associated With Coronary Artery Bypass Grafting in Israel**
Benjamin Mozes, MD, Liraz Olmer, MSc, Noya Galai, PhD, and Elisheva Simchen, MD, for the ISCAB Consortium

Invited Commentary
William C. Nugent, MD

1264 **Computed Tomographic Evaluation of Retrosternal Adhesions After Pericardial Substitution**
Jarmo Lahtinen, MD, Jari Satta, MD, PhD, Seppo Lähde, MD, PhD, Ilkka Suramo, MD, PhD, Juha Nissinen, MD, Risto Pokela, MD, PhD, and Tatu Juvonen, MD, PhD

1269 **Residual Aortic Valve Regurgitation After Aortic Root Remodeling Without a Direct Annuloplasty**
Carlo Bassano, MD, PhD, Ruggero De Paulis, MD, Alfonso Penta de Peppo, MD, Antonio Tondo, MD, Laura Fratticci, MD, Giovanni M. De Matteis, MD, Alessandro Ricci, MD, Luigi Sommariva, MD, and Luigi Chiariello, MD

1273 **Simultaneous Coronary Artery Bypass Grafting and Abdominal Aneurysm Repair Decreases Stay and Costs**
Robert C. King, MD, Patrick E. Parrino, MD, Janet L. Hurst, MBA, Kimberly S. Shockey, MS, Curtis G. Tribble, MD, and Irving L. Kron, MD

1277 **Intraoperative TEE During Mitral Valve Repair: Does It Predict Early and Late Postoperative Mitral Valve Dysfunction?**
Yoshikatsu Saiki, MD, PhD, Hitoshi Kasegawa, MD, Mitsuhiko Kawase, MD, Hiroto Osada, MD, and Eiji Ootaki, MD

1282 **Pulsed Doppler Intraoperative Flow Assessment and Midterm Coronary Graft Patency**
Yves A. G. Louagie, MD, PhD, Carlos E. Brockmann, MD, Jacques Jamart, MD, Erwin Schroeder, MD, Michel Buche, MD, Philippe M. Eucher, MD, and Jean-Claude Schoevaerdts, MD

Invited Commentary
Hendrick B. Barner, MD

1289 **Angiographic Predictors of Graft Patency and Disease Progression After Coronary Artery Bypass Grafting With Arterial and Venous Grafts**
Hannu I. Manninen, MD, PhD, Pekka Jaakkola, MD, Matti Suhonen, MD, Sinikka Rehnberg, MD, PhD, Rauli Vuorenniemi, MD, and Pekka J. Matsi, MD

1295 **Traumatic Aortic Rupture: Diagnosis and Management**
James S. Gammie, MD, Ashish S. Shah, MD, Brack G. Hattler, MD, PhD, Robert L. Kormos, MD, Andrew B. Peitzman, MD, Bartley P. Griffith, MD, and Si M. Pham, MD

1301 **Video-Assisted Minimal Access in Excision of Left Atrial Myxoma**
Po-Jen Ko, MD, Chau-Hsiung Chang, MD, Pyng Jing Lin, MD, Jaw-Ji Chu, MD, Feng-Chun Tsai, MD, Chuen Hsueh, MD, and Min-Wen Yang, MD

1306 **Central Venous Catheter Use in Low-Risk Coronary Artery Bypass Grafting**
Robert D. Stewart, MD, Triffin Psyhojos, MD, Stephen J. Lahey, MD, Sidney Levitsky, MD, and Christian T. Campos, MD

1312 **Coronary Artery Operation in Patients After Breast Cancer Therapy**
Eldad Erez, MD, Samuel Eldar, MD, Erez Sharoni, MD, Dan Abramov, MD, Aharon Sulkes, MD, and Bernardo A. Vidne, MD

1318 **Potassium-Channel Opener in Cardioplegia May Restore Coronary Endothelial Function**
Guo-Wei He, MD, PhD

1323 **Results of a Regional Study of Modes of Death Associated With Coronary Artery Bypass Grafting**
Gerald T. O'Connor, PhD, John D. Birkmeyer, MD, Lawrence J. Dacey, MD, Hebe B. Quinton, MS, Charles A. S. Marrin, MB, BS, Nancy J. O. Birkmeyer, PhD, Jeremy R. Morton, MD, Bruce J. Leavitt, MD, Christopher T. Maloney, MD, Felix Hernandez, MD, Robert A. Clough, MD, William C. Nugent, MD, Elaine M. Olmstead, BA, David C. Charlesworth, MD, and Stephen K. Plume, MD, for the Northern New England Cardiovascular Disease Study Group

1329 **The Superiority of Pinacidil Over Adenosine Cardioplegia in Blood-Perfused Isolated Hearts**
A. Mark Jayawant, MD, and Ralph J. Damiano, Jr, MD

Invited Commentary
Jakob Vinten-Johansen, PhD

1337 **Should a Bicuspid Aortic Valve Be Replaced in the Presence of Subvalvar or Supravalvar Aortic Stenosis?**
Ralph E. Delius, MD, Margaret M. Samyn, MD, and Douglas M. Behrendt, MD

1343 **Daily Noninvasive Rejection Monitoring Improves Long-Term Survival in Pediatric Heart Transplantation**
Roland Hetzer, MD, PhD, Evgueni V. Potapov, MD, Johannes Müller, MD, Matthias Loebe, MD, Manfred Hummel, MD, PhD, Yuguo Weng, MD, Henning Warnecke, MD, PhD, and Peter E. Lange, MD, PhD

1350 **Biventricular Repair in Neonates With Hypoplastic Left Heart Complex**
Christo I. Tchervenkov, MD, Stephen A. Tahta, MD, Luc C. Jutras, MD, and Marie J. Béland, MD

1358 **The Importance of Cardioplegic Infusion Pressure in Neonatal Myocardial Protection**
Michael Kronon, MD, Kirk S. Bolling, MD, Bradley S. Allen, MD, Ari O. Halldorsson, MD, Tingrong Wang, MD, and Shaikh Rahman, PhD

1365 **Repair of Coarctation With Resection and Extended End-to-End Anastomosis**
Carl L. Backer, MD, Constantine Mavroudis, MD, Elias A. Zias, MD, Zahid Amin, MD, and Thomas J. Weigel, MD

Invited Commentary
Joseph J. Amato, MD

1372 **Increased Pulmonary Blood Flow Produces Endothelial Cell Dysfunction in Neonatal Swine**
Eugene V. Vitvitsky, MD, John P. Griffin, Margaret H. Collins, MD, Thomas L. Spray, MD, and J. William Gaynor, MD

1378 **Repair of Coarctation of the Aorta During Infancy Minimizes the Risk of Late Hypertension**
Peter A. Seirafi, MD, Kenneth G. Warner, MD, Robert L. Geggel, MD, Douglas D. Payne, MD, and Richard J. Cleveland, MD

1383 **Perioperative Conduction and Rhythm Disturbances After the Ross Procedure in Young Patients**
J. R. Bockoven, MD, Gil Wernovsky, MD, Victoria L. Vetter, MD, Tammy S. Wieand, MS, Thomas L. Spray, MD, and Larry A. Rhodes, MD

1389 **Interventricular Communication in Complete Atrioventricular Septal Defect**
Kiyoshi Suzuki, MD, PhD, Siew Yen Ho, PhD, Robert H. Anderson, MD, Anton E. Becker, MD, PhD, William H. Neches, MD, Katsuhiko Tatsuno, MD, PhD, and Shigekazu Mimori, MD, PhD

1394 **Mixed Type of Total Anomalous Pulmonary Venous Connection**
Yutaka Imoto, MD, Hideaki Kado, MD, Toshihide Asou, MD, Yuichi Shiokawa, MD, Ryuji Tominaga, MD, and Hisataka Yasui, MD

CASE REPORTS

1398 **Iatrogenic Mammary Arteriovenous Fistula Caused by Sternal Wire**
Jacobo Silva, MD, José Gonzalez-Santos, MD, María Pérez, MD, Manuel Ruiz, MD, and José L. Vallejo, MD

1400 **Less Invasive Aortic Root Replacement**
Stephen Westaby, FRCS, Takahiro Katsumata, MD, PhD, and Ahmed Arifi, FRCS

1401 **Intraoperative Map-Guided Operation for Chronic Atrial Fibrillation**
Atsushi Harada, MD, Tadahiko Sugimoto, MD, Tetsuo Asano, MD, and Kenichi Yamada, MD

1403 **Anomalous Coronary Artery With Tetralogy of Fallot and Aortopulmonary Window**
Victor O. Morell, MD, Mariano Feccia, MD, Seamus Cullen, MD, and Martin J. Elliott, FRCS

1405 Resection of a Leiomyosarcoma of the Azygos Vein
Uday Dasika, MD, Nazli Shariati, MD, and John M. Brown III, MD

1406 Origin of the Circumflex Coronary Artery From the Pulmonary Artery in Infants
Vladimir Alexi-Meskishvili, MD, PhD, Ingo Dähnert, MD, Roland Hetzer, MD, PhD, Peter E. Lange, MD, PhD, and Tom R. Karl, MD

1409 Hodgkin's Disease Presenting With a Bronchoesophageal Fistula
Edmund S. Kassis, BS, Chandra P. Belani, MD, Peter F. Ferson, MD, Robert J. Keenan, MD, and James D. Luketich, MD

1411 Extramedullary Hematopoiesis Mimicking Metastatic Lung Carcinoma
F. Ida Hsu, BA, Daniel A. Filippa, MD, Hugo Castro-Malaspina, MD, and Robert J. Downey, MD

1413 Funnel Graft to Innominate Vein to Control Epicardial Bleeding
Inder D. Mehta, MD, and John A. Elefteriades, MD

1414 Combined Lung Volume Reduction and Mitral Valve Reconstruction
Richard I. Whyte, MD, William Bria, MD, Fernando J. Martinez, MD, Pamela Lewis, MS, and Steven F. Bolling, MD

1416 Transposition of the Great Arteries With Anomalous Origin of the Left Coronary Artery From the Pulmonary Artery
Masaaki Yamagishi, MD, Takeshi Emmoto, MD, Yukio Wada, MD, and Takahiro Oka, MD

1418 Primary Esophageal Lymphoma: A Diagnostic Challenge
Christopher T. Salerno, MD, Nathaniel S. Kreykes, BA, Alfredo Rego, MD, PhD, and Michael A. Maddaus, MD

1420 Left Anterior Thoracotomy for Pulmonary Embolectomy With 29-Year Follow-up
Åke Senning, MD

1421 Repair of Left Ventricular Diverticulum With Ventricular Bigeminy in an Infant
Hiroaki Kawata, MD, Hidefumi Kishimoto, MD, Takayoshi Ueno, MD, Futoshi Kayatani, MD, and Tohru Mori, MD

1423 Primary Malignant Lymphoma of Superior Vena Cava
Hiroaki Nomori, MD, Sadahiro Nara, MD, Shojiroh Morinaga, MD, and Kyoko Soejima, MD

1424 Internal Thoracic Artery Atherosclerosis After Coarctation Repair in an Adult
Mario Castaño, MD, Jacobo Silva, MD, Ramón Fortuny, MD, Javier López, MD, and José L. Vallejo, MD

HOW TO DO IT

1427 Subxiphoidal Videomediastinoscopy for Diagnostic Access to the Anterior Mediastinum
Joerg Hutter, MD, Werner Junger, MD, Karl Miller, MD, and Erich Moritz, MD

1429 Full Sternotomy Through a Minimally Invasive Incision: A Cardiac Surgeon's True Comfort Zone
Cary W. Akins, MD

1431 Intraoperative "Direct" LIMA Angiography for Beating Heart Operations
Mohammad Bashar Izzat, FRCS(CTh), M. Hazem El-Zufari, MD, and Anthony P. C. Yim, MD

1433 Repair of Secundum Atrial Septal Defect: Limiting the Incision Without Sacrificing Exposure
Junaid H. Khan, MD, Doff B. McElhinney, MD, V. Mohan Reddy, MD, and Frank L. Hanley, MD

1436 Tube Device for Facilitating Distal Anastomosis in Aortic Arch Replacement
Tadahiro Sasajima, MD, Kazutomo Goh, MD, Hidenori Asada, MD, Tokihito Sugawara, and Norifumi Ohtani, MD

1438 Use of the "Chimney Patch" Technique for Norwood Stage I Procedures
Mark D. Plunkett, MD, Linda M. Bond, MA, and Dale M. Geiss, MD

OUR SURGICAL HERITAGE

1440 Nikolai Terebinski: A Pioneer of the Open Valve Operation
Vladimir V. Alexi-Meskishvili, MD, PhD, Evgenij V. Potapov, MD, Erik A. K. Beyer, MD, and Roland Hetzer, MD, PhD

CURRENT REVIEW

1444 Anomalous Origin of the Right Coronary Artery: Preoperative and Postoperative Hemodynamics
Peter W. Radke, MD, Bruno J. Messmer, MD, Philipp K. Haager, MD, and Heinrich G. Klues, MD

UPDATE

1450 Triiodothyronine-Enhanced Left Ventricular Function After Ischemic Injury
Cornelius M. Dyke, MD, Thomas Yeh, Jr, MD, Jonathan D. Lehman, BS, Anwar Abd-Elfattah, PhD, Mai Ding, MD, Andrew S. Wechsler, MD, and David R. Salter, MD

Invited Commentary
John R. Benfield, MD

BETHESDA CONFERENCE REPORT

1452 Bethesda Conference: Conference for the Design of Clinical Trials to Study Circulatory Support Devices for Chronic Heart Failure
Walter E. Pae, Jr

CORRESPONDENCE

1466 Is There a Need for a Utility Thoracotomy During VATS Major Lung Resections?
Eduardo A. Tovar, MD

Reply
Masayuki Iwasaki, MD, and Hiroshi Inoue, MD

1467 Use of a Venous Double-Lumen Cannula for ECMO in a Neonate With Congenital Heart Disease
Kouichi Hisatomi, MD, Haruhiko Yamada, MD, Hiroyuki Noguchi, MD, and Akira Taira, MD

Reply
Gerhard Trittenwein, MD, Johann Golej, MD, Gudrun Burda, MD, and Michael Hermon, MD

1469 Minimally Invasive Coronary Artery Bypass: Just Another Commentary
Robert Santoscoy, MD, and Luis C. Martinez, MD

1469 Circulating Adhesion Molecules in Cardiac Surgical Patients
Joseph L. Galea, FRCS, Alex Manché, MPhil, FRCS(CT), and Adam R. Finn, PhD, FRCP

Reply
Kevin D. Murray, MD, and Michael K. Pasque, MD

1470 Implantation of Mechanical Valves for Infective Endocarditis
Hisanaga Moro, MD, Jun-ichi Hayashi, MD, and Osamu Namura, MD

Reply
Robert Bauernschmitt, MD, Rüdiger Lange, MD, and Siegfried Hagl, MD

1471 CABG Risk Model
Joan Ivanov, MSc

Reply
A. Laurie W. Shroyer, PhD, Gary K. Grunwald, PhD, Fred H. Edwards, MD, and Frederick L. Grover, MD

1472 Reoperation for Cardiac Postoperative Bleeding
David B. Ross, MD, Allan McIntyre, MD, and Carolyn MacDougall, RN

Reply
Marc P. Pelletier, MD, and Ray C.-J. Chiu, MD, PhD

REVIEW OF RECENT BOOKS

1139 Vascular Surgery: A Comprehensive Review, edited by Wesley S. Moore, MD
Walter J. McCarthy III, MD

ANNOUNCEMENTS

A-38	Forthcoming Articles
A-41, A-42	Information for Authors
A-43	Guidelines for the Submission of Electronic Manuscripts
A44–A46	Events of Interest
1127	New Feature: Images in Cardiothoracic Surgery
1169, 1281	Notice from the American Board of Thoracic Surgery
1209	*The Annals of Thoracic Surgery* Cumulative Index
1268	The Society of Thoracic Surgeons: Thirty-fifth Annual Meeting
1294	Notice From the Southern Thoracic Surgical Association
1300	J. Kent Trinkle, MD 1934–1998
1317	Important Announcement
1328	New Senior Production Editor
1393	Discussion Groups on the Internet

1397 New Requirements for Recertification in the Year 2001

A-56 Index to Advertisers

OUTCOMES '98 SUPPLEMENT

1473 Conference on Cardiac and Vascular Surgery: Neurobehavioral Assessment, Physiological Monitoring and Cerebral Protective Strategies

1474 Introduction
John M. Murkin, MD, and David A. Stump, PhD

1476 PROGRAM

POINT-COUNTERPOINT

1480 Carotid Endarterectomy and Coronary Artery Bypass: The Staged Approach
Robert G. Johnson, MD

1483 Combined Carotid Endarterectomy and Coronary Revascularization Operation
Cary W. Akins, MD

1485 Outcomes After Vascular Operations: Federal and Private Perspectives
Jay Moskowitz, PhD

1486 Health-Related Quality of Life Outcomes in Clinical Research: NHLBI Policy and Perspectives
Susan M. Czajkowski, PhD

SCIENTIFIC ABSTRACTS

1488 Commentary

1489 Abstracts

Number 5 November 1998

SPECIAL ANNOUNCEMENT

1497 New Feature: Images in Cardiothoracic Surgery

ORIGINAL ARTICLES: CARDIOVASCULAR

1498 Circulatory Support With Pneumatic Paracorporeal Ventricular Assist Device in Infants and Children
Roland Hetzer, MD, PhD, Matthias Loebe, MD, Evgenij V. Potapov, MD, Yuguo Weng, MD, Brigitte Stiller, MD, Ewald Henning, MD, Vladimir Alexi-Meskishvili, MD, PhD, and Peter E. Lange, MD, PhD

1507 Strategies of Myocardial Protection for Operation in Chronic Model of Cyanotic Heart Disease
Ji Zhang, MD, W. R. Eric Jamieson, MD, Heidar Sadeghi, MD, Kris Gillespie, AHT, Joanna R. Marier, AHT, Harry Mickleson, CCP, and Robert McGibbon

1514 Relentless Pulmonary Vein Stenosis After Repair of Total Anomalous Pulmonary Venous Drainage
Christopher A. Caldarone, MD, Hani K. Najm, MD, Margit Kadletz, MD, Jeffrey F. Smallhorn, MD, Robert M. Freedom, MD, William G. Williams, MD, and John G. Coles, MD

1521 Surgical Management of Total Anomalous Pulmonary Venous Drainage: Impact of Coexisting Cardiac Anomalies
Christopher A. Caldarone, MD, Hani K. Najm, MD, Margit Kadletz, MD, Jeffrey F. Smallhorn, MD, Robert M. Freedom, MD, William G. Williams, MD, and John G. Coles, MD

1527 Neonatal Piglet Model of Intraaortic Balloon Pumping: Improved Efficacy Using Echocardiographic Timing
L. LuAnn Minich, MD, Lloyd Y. Tani, MD, George M. Pantalos, PhD, Bridget L. Bolland, BS, Brett K. Knorr, MD, and John A. Hawkins, MD

1533 Double Patch Closure of Ventricular Septal Defect With Increased Pulmonary Vascular Resistance
William M. Novick, MD, A. Tayfun Gurbuz, MD, Donald C. Watson, MD, Vasily V. Lazorishinets, MD, Alexander N. Perepeka, MD, Ivan Malcic, MD, PhD, Branko Marinovic, MD, Bruce S. Alpert, MD, and Thomas G. DiSessa, MD

1539 Late Results of Bioprosthetic Tricuspid Valve Replacement in Ebstein's Anomaly
H. Tarik Kiziltan, MD, David A. Theodoro, MD, Carole A. Warnes, MD, Patrick W. O'Leary, MD, Betty J. Anderson, RN, and Gordon K. Danielson, MD

1546 **Alternative Approach to the Repair of Ebstein's Malformation: Intracardiac Repair With Ventricular Unloading**
Stefano M. Marianeschi, MD, Doff B. McElhinney, MD, V. Mohan Reddy, MD, Norman H. Silverman, MD, and Frank L. Hanley, MD

1551 **Surgical Repair of the Congenitally Malformed Mitral Valve in Infants and Children**
Elias A. Zias, MD, Constantine Mavroudis, MD, Carl L. Backer, MD, Lisa M. Kohr, CPNP, Nina L. Gotteiner, MD, and Albert P. Rocchini, MD

1560 **Surgical Indication for Congenital Heart Disease With Extremely Thickened Media of Small Pulmonary Arteries**
Shigeo Yamaki, MD, Ai Abe, MD, Masato Endo, MD, Takashi Tanaka, MD, Koichi Tabayashi, MD, and Tohru Takahashi, MD

1565 **Inoperable Pulmonary Vascular Disease in Infants With Congenital Heart Disease**
Shigeo Yamaki, MD, Ai Abe, MD, Koichi Tabayashi, MD, Masato Endo, MD, Hitoshi Mohri, MD, and Tohru Takahashi, MD

1571 **Surgical Management of Isolated Congenital Tricuspid Regurgitation**
Toshiyuki Katogi, MD, Ryo Aeba, MD, Tsutomu Ito, MD, Tetsuya Goto, MD, Yasunori Cho, MD, Toshihiko Ueda, MD, and Shiaki Kawada, MD

1575 **Risks of Repeat Sternotomy in Pediatric Cardiac Operations**
Jennifer L. Russell, MD, Jacques G. LeBlanc, MD, Suvro S. Sett, MD, and James E. Potts, PhD

1579 **Degenerative Mitral Regurgitation: When Should We Operate?**
Malcolm J. R. Dalrymple-Hay, PhD, Mark Bryant, Richard A. Jones, MRCP, Stephen M. Langley, FRCS, Steven A. Livesey, FRCS, and James L. Monro, FRCS

1585 **Determinants of Midterm Outcome of Partial Left Ventriculectomy in Dilated Cardiomyopathy**
Noedir A. G. Stolf, MD, Luiz Felipe P. Moreira, MD, Edimar A. Bocchi, MD, Maria de Lourdes Higuchi, MD, Fernando Bacal, MD, Giovanni Bellotti, MD, and Adib D. Jatene, MD

1592 **Disadvantages of Local Repair in Acute Type A Aortic Dissection**
Urs Niederhäuser, MD, Zuzanna Kaplan, MD, Andreas Künzli, MD, Michele Genoni, MD, Gregor Zünd, MD, Mario L. Lachat, MD, Paul R. Vogt, MD, and Marko I. Turina, MD

1600 **Carnitine Supplementation Improves Myocardial Function in Hearts From Ischemic Diabetic and Euglycemic Rats**
V. Antoine Keller, MD, Bruce Toporoff, MD, Randall M. Raziano, MD, John D. Pigott, MD, and Noel L. Mills, MD

1604 **Repair of Ruptured Sinus of Valsalva Aneurysm: Determinants of Long-Term Survival**
Wing-Kuk Au, FRCS, Shiu-Wah Chiu, FRCS, Che-Keung Mok, FRCS, Wai-Tsun Lee, FRCS, David Cheung, FRCS, and Guo-Wei He, MD, PhD

1611 **Neuropsychological Dysfunction After Minimally Invasive Direct Coronary Artery Bypass Grafting**
Marie J. Andrew, BA, Robert A. Baker, PhD, Anthony C. Kneebone, MA, and John L. Knight, FRACS

1618 **Triiodothyronine Reverses Depressed Contractile Performance After Excessive Catecholamine Stimulation**
Tomasz Timek, MD, Christian-Friedrich Vahl, MD, Andreas Bonz, MD, Leo Schäffer, Mark Rosenberg, and Siegfried Hagl, MD

1626 **Clinical Experience With the Video-Assisted Saphenectomy Procedure for Coronary Bypass Operations**
Sebastian Pagni, MD, Eduardo A. Ulfe, BA, William D. Montgomery, BS, Daniel J. VanHimbergen, BA, Dana J. Fisher, RN, Laman A. Gray, Jr, MD, and Paul A. Spence, MD

1632 **Coronary Artery Bypass Grafting in Patients With Advanced Left Ventricular Dysfunction**
Gregory D. Trachiotis, MD, William S. Weintraub, MD, Thomas S. Johnston, MD, Ellis L. Jones, MD, Robert A. Guyton, MD, and Joseph M. Craver, MD

1640 **"Bow-Tie" Mitral Valve Repair: An Adjuvant Technique for Ischemic Mitral Regurgitation**
Juan P. Umaña, MD, Bijan Salehizadeh, BA, Joseph J. DeRose, Jr, MD, Tamanna Nahar, MD, Alan Lotvin, MD, Shunichi Homma, MD, and Mehmet C. Oz, MD

1647 **Lazaroid U74500A Is Superior to U74006F in Preserving Rabbit Heart for 24 Hours**
Takahiro Nishida, MD, Shigeki Morita, MD, Munetaka Masuda, MD, Ryuji Tominaga, MD, Yoshito Kawachi, MD, and Hisataka Yasui, MD

1653 **Fluorescence Activated Cell Sorting: A Reliable Method in Tissue Engineering of a Bioprosthetic Heart Valve**
Simon P. Hoerstrup, MD, Gregor Zünd, MD, Andreina Schoeberlein, PhD, Qing Ye, MD, Paul R. Vogt, MD, and Marko I. Turina, MD

1658 **Protective Action of 17β-Estradiol in Cardiac Cells: Implications for Hyperkalemic Cardioplegia**
Sofija Jovanović, DVM, Aleksandar Jovanović, MD, Win K. Shen, MD, and Andre Terzic, MD

1662 **The CardioWest Total Artificial Heart Bridge to Transplantation: 1993 to 1996 National Trial**
Jack G. Copeland III, MD, Francisco A. Arabía, MD, Mary E. Banchy, RN, Gulshan K. Sethi, MD, Bryan Foy, MD, James Long, MD, Robert L. Kormos, MD, and Richard G. Smith, MSEE, CCE

Invited Commentary
Patrick M. McCarthy, MD

1670 **Cardiac Operations in the Elderly: Who Is at Risk?**
Gyaandeo S. Maharajh, MD, Roy G. Masters, MD, and Wilbert J. Keon, MD

1674 **Pattern and Significance of Cerebral Microemboli During Coronary Artery Bypass Grafting**
Stephen Sylivris, MD, Christopher Levi, FRACP, George Matalanis, FRACS, Alexander Rosalion, FRACS, Brian F. Buxton, FRACS, Anne Mitchell, FRACR, Gregory Fitt, FRACR, David B. Harberts, B AppSci, Michael M. Saling, PhD, and Andrew M. Tonkin, MD

1679 **Experimental Confirmation of Effectiveness of Fenestration in Acute Aortic Dissection**
David L. S. Morales, MD, Jacquelyn A. Quin, MD, John H. Braxton, MD, Graeme L. Hammond, MD, Richard J. Gusberg, MD, and John A. Elefteriades, MD

1684 **Outcome Analysis of 245 CarboMedics and St. Jude Valves Implanted at the Same Institution**
Todd K. Rosengart, MD, Maureen O'Hara, RN, Samuel J. Lang, MD, Wilson Ko, MD, Nasser Altorki, MD, Karl H. Krieger, MD, and O. Wayne Isom, MD

Invited Commentary
Joseph M. Craver, MD

1692 **Flexible Posterior Mitral Annuloplasty: Five-Year Clinical and Doppler Echocardiographic Results**
Lionel F. Camilleri, MD, PhD, Bruno Miguel, MD, Patrick Bailly, MD, PhD, Benoit J. Legault, MD, Marie-Claire D'Agrosa-Boiteux, MD, Gian Luca Polvani, MD, and Charles M. de Riberolles, MD

1698 **Permanent Cardiac Pacing After a Cardiac Operation: Predicting the Use of Permanent Pacemakers**
Richard S. Gordon, BSc, Joan Ivanov, MSc, Gideon Cohen, MD, and Anthony L. Ralph-Edwards, MD

1705 **Nonpenetrating Stapling: A Valuable Alternative for Coronary Anastomoses?**
Gianfranco Lisi, MD, Louis P. Perrault, MD, PhD, Philippe Menasché, MD, PhD, Alain Bel, MD, Michel Wassef, MD, Jean-Paul Vilaine, MD, and Paul M. Vanhoutte, MD, PhD

ORIGINAL ARTICLES: GENERAL THORACIC

1709 **Pulmonary Metastasectomy for Testicular Germ Cell Tumors: A 28-Year Experience**
David Liu, MD, Amir Abolhoda, MD, Michael E. Burt, MD, PhD, Nael Martini, MD, Manjit S. Bains, MD, Robert J. Downey, MD, Valerie W. Risch, MD, George J. Bosl, MD, and Robert J. Ginsberg, MD

1715 **Detection of Micrometastases in Histologically Negative Lymph Nodes in Esophageal Cancer**
James D. Luketich, MD, Edmund S. Kassis, BS, Sharon P. Shriver, PhD, Ninh T. Nguyen, MD, Philip R. Schauer, MD, Tracey L. Weigel, MD, Samuel A. Yousem, MD, and Jill M. Siegfried, PhD

1719 **Isolated Lung Perfusion With Melphalan and Tumor Necrosis Factor for Metastatic Pulmonary Adenocarcinoma**
Jeroen M. H. Hendriks, MD, Paul E. Y. Van Schil, PhD, Gert De Boeck, Patrick R. M. Lauwers, MD, Allan A. T. Van Oosterom, PhD, Erik Van Marck, PhD, and Erik Eyskens, PhD

1726 **A Prospective Algorithm for the Management of Air Leaks After Pulmonary Resection**
Robert J. Cerfolio, MD, Ramu P. Tummala, BS, William L. Holman, MD, George L. Zorn, MD, James K. Kirklin, MD, David C. McGiffin, MD, David C. Naftel, PhD, and Albert D. Pacifico, MD

1732 **Preservation With 8-Bromo-Cyclic GMP Improves Pulmonary Function After Prolonged Ischemia**
Robert C. King, MD, Victor E. Laubach, PhD, R. Chai Kanithanon, BA, Adam M. Kron, Patrick E. Parrino, MD, Kimberly S. Shockey, MS, Curtis G. Tribble, MD, and Irving L. Kron, MD

1739 **Uncut Collis-Nissen Fundoplication: Learning Curve and Long-Term Results**
Victor F. Trastek, MD, Claude Deschamps, MD, Mark S. Allen, MD, Daniel L. Miller, MD, Peter C. Pairolero, MD, and Ann M. Thompson, RN

1745 **Lewis Y Antigen Expression and Postoperative Survival in Non–Small Cell Lung Cancer**
Fumihiro Tanaka, MD, Ryo Miyahara, MD, Yohsuke Ohtake, MD, Kazuhiro Yanagihara, MD, Tatsuo Fukuse, MD, Shigeki Hitomi, MD, and Hiromi Wada, MD

1751 **Early Chest Tube Removal After Video-Assisted Thoracoscopic Wedge Resection of the Lung**
Louis Russo, MD, Robert J. Wiechmann, MD, James A. Magovern, MD, Gary W. Szydlowski, MD, Michael J. Mack, MD, Keith S. Naunheim, MD, and Rodney J. Landreneau, MD

1755 **Acute and Chronic Effects of Bilateral Lung Transplantation Without Cardiopulmonary Bypass on the First Transplanted Lung**
Brett C. Sheridan, MD, Tony N. Hodges, MD, Martin R. Zamora, MD, David L. Lynch, MD, James M. Brown, MD, David N. Campbell, MD, and Frederick L. Grover, MD

1759 **Comparison of Open and Thoracoscopic Bilateral Volume Reduction Surgery: Complications Analysis**
John R. Roberts, MD, Joseph E. Bavaria, MD, Peter Wahl, BA, Angela Wurster, CRNP, Joseph S. Friedberg, MD, and Larry R. Kaiser, MD

1766 **Incidence and Predictors of Supraventricular Dysrhythmias After Pulmonary Resection**
Jack J. Curtis, MD, Brent M. Parker, MD, Charlotte A. McKenney, RN, Colette C. Wagner-Mann, DVM, PhD, Joseph T. Walls, MD, Todd L. Demmy, MD, and Richard A. Schmaltz, MD

1772 **Comparison of Tissue Reactions in the Tracheal Mucosa Surrounding a Bioabsorbable and Silicone Airway Stents**
Antti Korpela, MD, Pertti Aarnio, MD, Hannu Sariola, MD, Pertti Törmälä, PhD, and Ari Harjula, MD

1777 **Experimental Study of Tracheal Patch Reconstruction With a Covered Expandable Metallic Stent**
Hidehiko Kitagami, MD, Toshiyuki Takahashi, MD, PhD, Satoshi Watanabe, MD, PhD, On Suzuki, MD, Toshiaki Morikawa, MD, Shun-ichi Okushiba, MD, PhD, and Hiroyuki Katoh, MD, PhD

1782 **Outcome of Primary Empyema Thoracis: Therapeutic and Microbiologic Aspects**
Ashis K. Mandal, MD, Haragopal Thadepalli, MD, Aloke K. Mandal, MD, PhD, and Uli Chettipally, MD

1787 **Ongoing Prospective Study of Segmentectomy for Small Lung Tumors**
Noriaki Tsubota, MD, Kimiyoshi Ayabe, MD, Osamu Doi, MD, Takashi Mori, MD, Shouji Namikawa, MD, Toshihiko Taki, MD, and Yo Watanabe, MD, for the Study Group of Extended Segmentectomy for Small Lung Tumor

Invited Commentary
Robert J. Ginsberg, MD

CASE REPORTS

1791 **Long-Term Remission After Resection, Chemotherapy, and Irradiation of a Metastatic Myxoma**
Franziska Bernet, MD, Peter M. Stulz, MD, and Thierry P. Carrel, MD

1793 **Aortico-Right Ventricular Tunnel**
Florentino J. Vargas, MD, Alberto Molina, MD, Juan C. Martinez, MD, Maria E. Ranzini, MD, and Juan C. Vazquez, MD

1795 **Murphy's Law in Cardiac Surgery**
Charlotte Fischer, MD, Werner Kenn, MD, and Rolf-Edgar Silber, MD

1797 **Anomalous Right Coronary Artery From the Pulmonary Artery in Taussig-Bing Anomaly**
Benjamin W. Eidem, MD, Frank Cetta, MD, Patrick T. Roughneen, FRCS, Serafin Y. DeLeon, MD, and Elizabeth A. Fisher, MD

1799 **Anatomy of Inferior Pulmonary Vein Should Be Clarified in Lower Lobectomy**
Satoru Sugimoto, MD, Osamu Izumiyama, MD, Akio Yamashita, MD, Masahito Baba, MD, and Tadashi Hasegawa, MD

1800 **Successful Palliation of Acute Superior Vena Caval Obstruction After the Senning Operation**
Afksendiyos Kalangos, MD, PhD, Maurice Beghetti, MD, Peter C. Rimensberger, MD, Ebrahim Khabiri, MD, Dominique Vala, MD, and Bernard Faidutti, MD

1803 **Hepatoatrial Anastomosis and Tricuspid Valve Replacement in Budd-Chiari Syndrome**
Cynthia K. Chiu, MD, David M. Nagorney, MD, and Hartzell V. Schaff, MD

1805 Chest Wall Repair With a Titanium Instrument
Kiyoshi Ohno, MD, Keiji Kuwata, MD, Yoshio Yamasaki, MD, Katsuhiko Akizuki, MD, and Iwao Satoh, MD

1806 Snaring of a Coronary Artery Causing Distal Atheroma Embolization
Mohammad Bashar Izzat, FRCS(CTh), Anthony P. C. Yim, MD, and M. Hazem El-Zufari, MD

1808 Mitral Valve Repair After Excision of a Fibrolipoma
Josep M. Caralps, MD, Vicens Martí, MD, Pere Ferrés, MD, Xavier Ruyra, MD, and M. Teresa Subirana, MD

1810 Six-Year Survival After Excision of Cardiac Malignant Lymphoma
Masatake Takagi, MD, Toshiyasu Kugimiya, MD, Yoshiyuki Miyahara, MD, and Tomayoshi Hayashi, MD

1811 Traumatic Tricuspid Valve Regurgitation and Cerebral Emboli
Ali A. Khaki, MD, and Albert Starr, MD

1814 Blunt Injury Rupture of Tricuspid Valve and Right Coronary Artery
Timothy H. Trotter, MD, Christopher J. Knott-Craig, MD, and Kent E. Ward, MD

1817 ABIOMED BVS 5000 System: Repair of Venous Cannulation Site for Excessive Bleeding
Tyrone J. Krause, MD

1818 Homograft Failure in Mycotic Aortic Aneurysm Caused by *Streptococcus pneumoniae*
Pascal A. Berdat, MD, Raffaele Malinverni, MD, Beat Kipfer, MD, and Thierry P. Carrel, MD

1819 Delayed Diagnosis of Anomalous Origin of the Left Coronary Artery 16 Years After Mitral Valve Replacement
Akihiko Ohkado, MD, Masafumi Yashima, MD, Masakuni Ishiyama, MD, Shigehiro Morishima, MD, and Eiichi Tei, MD

HOW TO DO IT

1821 Improved Exposure of the Pulmonary Arteries for Thromboendarterectomy
Gregor Zund, MD, René Prêtre, MD, Urs Niederhäuser, MD, Paul R. Vogt, MD, and Marko I. Turia, MD

1824 Elective Drainage of the Apical Chest by Posterior Approach
Marc Riquet, MD, Antoine Chehab, MD, Redha Souilamas, MD, Francoise Le Pimpec-Barthes, MD, and Bernard Debesse, MD

1826 Extracardiac Conduit Fontan Procedure Without Cardiopulmonary Bypass
Doff B. McElhinney, MD, Edwin Petrossian, MD, V. Mohan Reddy, MD, and Frank L. Hanley, MD

1829 Alternative Technique of Right-Sided Outflow Cannula Insertion for Right Ventricular Support
Todd M. Dewey, MD, Jonathan M. Chen, MD, Talia B. Spanier, MD, and Mehmet C. Oz, MD

1831 Pericardial Patch Augmentation of Anterior Tricuspid Leaflet in Ebstein's Anomaly
Jacques A. M. van Son, MD, PhD, Peter Kinzel, MD, and Friedrich W. Mohr, MD, PhD

1833 Thoracoscopic Pleural Tent
Federico Venuta, MD, Tiziano De Giacomo, MD, Erino A. Rendina, MD, Costante Ricci, MD, and Giorgio Furio Coloni, MD

1835 Speed-Controlled Venovenous Modified Ultrafiltration for Pediatric Open Heart Operations
Ryo Aeba, MD, Toru Matayoshi, CP, Toshiyuki Katogi, MD, and Shiaki Kawada, MD

1837 Measures to Control Blood Activation During Assisted Circulation
Christophe Baufreton, MD, PhD, Matthias Kirsch, MD, and Daniel Y. Loisance, MD

KEY REFERENCES

1845 Chylothorax
Robert L. Hopkins, MD, Olugbenga A. Akingbola, MD, and Edwin M. Frieberg, MD

UPDATE

1847 Use of the Inferior Epigastric Artery as a Free Graft for Myocardial Revascularization
Hendrick B. Barner, MD, Keith S. Naunheim, MD, Andrew C. Fiore, MD, Vernon W. Fischer, PhD, and Howard H. Harris, MD

REPORTS

1848 Policy Statement: Minimally Invasive Coronary Artery Bypass Surgery
The Society of Thoracic Surgeons/American Association of Thoracic Surgery Committee on New Technology

1850 Course Guidelines for Minimally Invasive Cardiac Surgery
The Society of Thoracic Surgeons/American Association for Thoracic Surgery Committee on New Technology

1852 **Long-Term Mechanical Circulatory Support System Reliability Recommendation: American Society for Artificial Internal Organs and The Society of Thoracic Surgeons: Long-Term Mechanical Circulatory Support System Reliability Recommendation**
George M. Pantalos, Frank Altieri, Alan Berson, Harvey Borovetz, Ken Butler, Glenn Byrd, Arthur A. Ciarkowski, Rosalie Dunn, O. Howard Frazier, Bartley Griffith, David W. Hoeppner, Jal S. Jassawalla, Robert H. Kormos, Robert T. V. Kung, Bette Lemperle, Jeffrey P. Lewis, D. Glenn Pennington, Victor L. Poirier, Peer M. Portner, Gerson Rosenberg, Rhona Shanker, and John T. Watson

CORRESPONDENCE

1860 **Interlocking Sternal Closure**
Guglielmo M. Actis Dato, MD, Luca Deorsola, MD, and Enrico Ruffini, MD

1861 **Fiftieth Anniversary of Successful Operation for Mitral Stenosis**

1861 **Cerebral Effects of Superior Vena Caval Cannula Obstruction**
Hisanaga Moro, MD, Jun-ichi Hayashi, MD, and Takashi Nakayama, MD

Reply
Rosendo A. Rodriguez, MD, PhD, Garry Cornel, FRCS(C), Nihal A. Weerasena, FRCS(CTh), and William M. Splinter, MD

1862 **Removing the Causes of Pulmonary Hypertension**
Bernard G. Krohn, MD

Reply
Michael Argenziano, MD, and Mehmet C. Oz, MD

1864 **Tetrazolium Reductase Activity in Human Heart Valves**
Rafael Villalba, MD, Manuel Concha, MD, and José Luis Gómez-Villagrán, MD

Reply
Jen Her Lu, MD, PhD, and Yen Chang, MD

1865 **Cardiopulmonary Bypass for Tracheal Tumor**
Igor E. Konstantinov, MD, and Arpad Peterffy, MD, PhD

1866 **Prevention of Potential Complications After Minimal Access Aortic Valve Replacement**
Friedrich-Christian Riess, MD, Christine Löwer, MD, and Niels Bleese, MD

1867 **Innovative Uses of Saphenous Vein Grafts in Minimally Invasive Coronary Surgery**
Eduardo A. Tovar, MD

Reply
V. R. Machiraju, MD, and Michael H. Culig, MD

1868 **Reducing Inflammatory Reactions by Heparin-Coated Circuit**
Song Wan, MD, PhD, Mohammed Bashar Izzat, FRCS(CTh), and Anthony P. C. Yim, MD

1868 **Atrial Flap Anastomosis: An Alternative Technique for Orthotopic Heart Transplantation**
Mazin A. Sarsam, FACS

Reply
Volker Döring, MD, PhD, and Peter Marcsek, MD

1869 **Is Resection the Only Effective Treatment for Bronchial Carcinoids?**
Bedrttin Yildizeli, MD, and Mustafa Yüksel, MD

Reply
Gilbert Massard, MD, Pascal Thomas, MD, Pierre Fuentes, MD, and Jean-Marie Wihlm, MD

1871 **Refined Alpha Aminooleic Acid and Experimental Calcification in Bioprostheses**
John Parker Gott, MD, and Robert A. Guyton, MD

1872 **Angiogenesis Induced by Transmyocardial Laser Revascularization**
Jiri T. Beranek, MD

Reply
Daniel Burkhoff, MD, PhD, Takushi Kohmoto, MD, and Craig R. Smith, MD

REVIEW OF RECENT BOOKS

1639 **Coarctation of the Inferior Vena Cava, by Solomon Victor, V. Jauanthi, and N. Madanagopalam**
Safoh Attar, MD

1646 **Lung Cancer, Second Edition, Edited by Jack A. Roth, James D. Cox, and Waun Ki Hong**
Patricia M. McCormack, MD

ANNOUNCEMENTS

A-40 **Forthcoming Articles**

A-41, A-42 **Information for Authors**

A-44–A-46 **Events of Interest**

1574, 1657 **Notice from the American Board of Thoracic Surgery**

1599 The Society of Thoracic Surgeons: Thirty-fifth Annual Meeting

1610 New Requirements for Recertification in the Year 2001

1704 J. Kent Trinkle, MD 1934–1998

1708 Important Announcement

1725 *The Annals of Thoracic Surgery* Cumulative Index

1776 New Senior Production Editor

1846 Discussion Groups on the Internet

A-56 Index to Advertisers

Number 5 November 1998 (Suppl)

S1 **Introduction**
Andrew S. Wechsler, MD

S2 **Arterial Grafting: Techniques and Conduits**
Hendrick B. Barner, MD

S6 **The Efficacy and Safety of Aprotinin Use in Cardiac Surgery**
Jeffrey B. Rich, MD

S12 **Inflammatory Response to Cardiopulmonary Bypass**
L. Henry Edmunds, Jr, MD

S17 **Endothelial Response to Cardiopulmonary Bypass Surgery**
Edward D. Verrier, MD

S20 **Central Nervous System Effects of Cardiopulmonary Bypass**
Kenneth M. Taylor, MD, FRCS, FRCSE, FESC, FSA

S25 **Discussion**
Andrew S. Wechsler, MD

Number 6 December 1998

EDITORIAL

1873 **Mammary Side Branch Steal: Is This a Real or Even Clinically Important Phenomenon?**
Morton J. Kern, MD

ORIGINAL ARTICLES: GENERAL THORACIC

1876 **Cost-Effectiveness of FDG-PET for Staging Non–Small Cell Lung Cancer: A Decision Analysis**
Walter J. Scott, MD, James Shepherd, MS, and Sanjiv Sam Gambhir, MD, PhD

Invited Commentary
Gerard A. Silvestri, MD

1886 **Success of Lapaoscopic Fundoplication for Gastroesophageal Reflux Disease**
Rodney J. Landreneau, MD, Robert J. Wiechmann, MD, Stephen R. Hazelrigg, MD, Tibetha S. Santucci, RN, Theresa M. Boley, MSN, Mitchell J. Magee, MD, and Keith S. Naunheim, MD

1894 **Inhaled Nitric Oxide for Adult Respiratory Distress Syndrome After Pulmonary Resection**
Douglas J. Mathisen, MD, Elbert Y. Kuo, MMS, Chiwon Hahn, MD, Ashby C. Moncure, MD, John C. Wain, MD, Hermes C. Grillo, MD, William E. Hurford, MD, and Cameron D. Wright, MD

1903 **Is Lobectomy by Video-Assisted Thoracic Surgery an Adequate Cancer Operation?**
Robert J. McKenna, Jr, MD, Randall K. Wolf, MD, Matthew Brenner, MD, Richard J. Fischel, MD, PhD, and Peter Wurnig, MD

1909 **Short-Course Induction Chemoradiotherapy With Paclitaxel for Stage III Non-Small-Cell Lung Cancer**
Thomas W. Rice, MD, David J. Adelstein, MD, Jay P. Ciezki, MD, Mark E. Becker, MD, Lisa A. Rybicki, MS, Carol F. Farver, MD, Marjorie A. Larto, RN, and Eugene H. Blackstone, MD

Invited Commentary
Willard A. Fry, MD

1915 **The Clinical Significance of Hepatocyte Growth Factor for Non–Small Cell Lung Cancer**
Jill M. Siegfried, PhD, Lisa A. Weissfeld, PhD, James D. Luketich, MD, Robert J. Weyant, PhD, Christopher T. Gubish, MS, and Rodney J. Landreneau, MD

1919 **Operation for Chronic Pulmonary Thromboembolism Accompanied by Thrombophilia in 8 Patients**
Motomi Ando, MD, Shinichi Takamoto, MD, Yutaka Okita, MD, Ritsu Matsukawa, MD, Norifumi Nakanishi, MD, Shingo Kyotani, MD, and Toru Satoh, MD

1925 **Stenting for Airway Obstruction in the Carinal Region**
Takeshi Shiraishi, MD, Katsunobu Kawahara, MD, Takayuki Shirakusa, MD, Kazuo Inada, MD, Kan Okabayashi, MD, and Akinori Iwasaki, MD

1930 **Pneumonectomy for Lung Metastases: Indications, Risks, and Outcome**
Lorenzo Spaggiari, MD, PhD, Dominique H. Grunenwald, MD, Philippe Girard, MD, Piergiorgio Solli, MD, and Thierry Le Chevalier, MD

Invited Commentary
Peter C. Pairolero, MD

ORIGINAL ARTICLES: CARDIOVASCULAR

1934 **Donor Cardiac Troponin T: A Marker to Predict Heart Transplant Rejection**
Palaniswamy Vijay, PhD, Vincent A. Scavo, MD, Robert J. Morelock, MD, Thomas G. Sharp, MD, and John W. Brown, MD

1940 **Tricuspid Valve Replacement: UK Heart Valve Registry Mid-Term Results Comparing Mechanical and Biological Prostheses**
Chandana P. Ratnatunga, FRCS, Maria-Benedicta Edwards, MPhil, Caroline J. Dore, BSc, and Kenneth M. Taylor, FRCS

1948 **Sustained Reduction of Neointima with c-*myc* Antisense Oligonucleotides in Saphenous Vein Grafts**
John D. Mannion, MD, Michael L. Ormont, MD, Michael G. Magno, PhD, James E. O'Brien, MD, Yi Shi, MD, PhD, and Andrew Zalewski, MD

1953 **Preconditioning Prevents Myocardial Stunning After Cardiac Transplantation**
Roderick W. Landymore, MD, Alexander J. Bayes, MD, J. Thomas Murphy, MD, and John H. Fris, RT

1958 **Serum S100β Release After Coronary Artery Bypass Grafting: Roller Versus Centrifugal Pump**
Saeed Ashraf, FRCS, Kausik Bhattacharya, FRCS, Sunny Zacharias, FRCS, Pradeep Kaul, FRCS, Philip H. Kay, DM, and Kevin G. Watterson, FRACS

1963 **Partial Left Ventriculectomy for Idiopathic Dilated Cardiomyopathy: Early Results and Six-Month Follow-Up**
Siniša Gradinac, MD, Milutin Mirić, MD, PhD, Zoran Popović, MD, Aleksandar D. Popović, MD, PhD, Aleksandar N. Nešković, MD, Ljiljana Jovović, MD, PhD, Ljiljana Vuk, MD, and Milovan Bojić, MD, PhD

1969 **What is the Marginal Cost for Marginal Risk in Cardiac Surgery?**
Thomas E. Williams Jr, MD, William J. Fanning, MD, W. C. Benton, PhD, Gerard S. Kakos, MD, Randall L. Miller, MD, William J. Esterline, MD, and Thomas D. Hankins, CP

1972 **Comparison of the Morphologic and Vascular Reactivity of the Proximal and Distal Radial Artery**
Adrian H. Chester, PhD, Adrian J. Marchbank, FRCS, Julie A. A. Borland, BSc, Magdi H. Yacoub, FRCS, and David P. Taggart, MD (Hons)

Invited Commentary
Charles A. Dietl, MD

1978 **Intraoperative Angiography to Assess Graft Patency After Minimally Invasive Coronary Bypass**
James A. Goldstein, MD, Robert D. Safian, MD, Darius Aliabadi, MD, William W. O'Neill, MD, Francis L. Shannon, MD, Joseph Bassett, MD, and Marc Sakwa, MD

1983 **Activity–Rest Stimulation of Latissimus Dorsi for Cardiomyoplasty: 1-Year Results in Sheep**
Giorgio Arpesella, MD, Ugo Carraro, MD, Piero M. Mikus, MD, Franco Dozza, MD, Pierloca Lombardi, MD, Giuseppe Marinelli, Sandra Zampieri, SciBiol, Abdul H. El Messlemani, Katia Rossini, SciBiol, and Angelo Pierangeli, MD

1991 **Heat Shock Improves Recovery and Provides Protection Against Global Ischemia After Hypothermic Storage**
Ashok Gowda, MS, Chunjie Yang, MD, Gregory K. Asimakis, PhD, Sohi Rastegar, PhD, and Massoud Motamedi, PhD

1998 **Activation of the Protein C System During Cardiopulmonary Bypass With and Without Aprotinin**
Ron G. H. Speekenbrink, MD, Rogier M. Bertina, PhD, Francisco España, PhD, Charles R. H. Wildevuur, MD, PhD, and Leon Eijsman, MD, PhD

2003 **Warm Reperfusion and Myocardial Protection**
Sidney Chocron, MD, PhD, Kifah Alwan, MD, Yusheng Yan, MD, Gérard Toubin, MD, Djamel Kaili, MD, Thierry Anguenot, MD, Leonardo Latini, MD, François Clement, MD, Jean-François Viel, MD, PhD, and Joseph-Philippe Etievent, MD

2008 **Selective Convective Brain Cooling During Hypothermic Cardiopulmonary Bypass in Dogs**
C. Thomas Wass, MD, Julian R. Waggoner III, MD, David G. Cable, MD, Hartzell V. Schaff, MD, Darrell R. Schroeder, and William L. Lanier, MD

2015 **Nitroglycerine Reduces Neutrophil Activation and Acute Damage in Latissimus Dorsi Muscle Grafts**
Augustine T. M. Tang, FRCS Ed, Philip Geraghty, Michael J. Dascombe, PhD, Jonathan C. Jarvis, PhD, Stanley Salmons, PhD, and Timothy L. Hooper, MD

2022 **Immunogenic Human Leukocyte Antigen Class II Antigens on Human Cardiac Valves Induce Specific Alloantibodies**
Franciska M. E. Hoekstra, MD, Marian Witvliet, BSc, Christiaan Y. Knoop, BSc, Claes Wassenaar, MD, Ad J. J. C. Bogers, MD, PhD, Willem Weimar, MD, PhD, and Frans H. J. Claas, PhD

Invited Commentary
Patrick G. Hogan, FRCPA, and Mark F. O'Brien, FRACS

2027 **Late Tamponade With Mechanical Circulatory Support**
Kenneth Smart, MD, and G. Kimble Jett, MD

2029 **Neovascularization After Transmyocardial Laser Revascularization in a Model of Chronic Ischemia**
G. Chad Hughes, MD, James E. Lowe, MD, Alan P. Kypson, MD, James D. St. Louis, MD, Anne M. Pippen, Kevin G. Peters, MD, R. Edward Coleman, MD, Timothy R. DeGrado, PhD, Carolyn L. Donovan, MD, Brian H. Annex, MD, and Kevin P. Landolfo, MD

2037 **Adenosine-Enhanced Ischemic Preconditioning Provides Enhanced Cardioprotection in the Aged Heart**
James D. McCully, PhD, Masahisa Uematsu, MD, Robert A. Parker, DSc, and Sidney Levitsky, MD

2044 **Influence of Functional Tricuspid Regurgitation on Right Ventricular Function**
Takaki Sugimoto, MD, Masayoshi Okada, MD, Nobuchika Ozaki, MD, Toshihiro Kawahira, MD, and Masato Fukuoka, MD

2051 **Does Bilateral Internal Thoracic Artery Grafting Increase Surgical Risk in Diabetic Patients?**
Miguel Sousa Uva, MD, Eric Braunberger, MD, Marc Fisher, MD, Yves Fromes, MD, Phillipe H. Deleuze, MD, Jean A. Celestin, MD, and Olivier M. Bical, MD

2056 **Steal Phenomenon From Mammary Side Branches: When Does It Occur?**
Mario Gaudino, MD, Michele Serricchio, MD, Franco Glieca, MD, Piergiorgio Bruno, MD, Paolo Tondi, MD, Alessandro Giordano, MD, Carlo Trani, MD, Maria Lucia Calcagni, MD, Paolo Pola, MD, and Gianfederico Possati, MD

2063 **Fucoidin Reduces Coronary Microvascular Leukocyte Accumulation Early in Reperfusion**
Leslie S. Ritter, PhD, Jack G. Copeland, MD, and Paul F. McDonagh, PhD

Invited Commentary
Takuya Miura, MD

2073 **Comparison of Troponin-I and Troponin-T After Pediatric Cardiovascular Operation**
Franz F. Immer, MD, Franco P. Stocker, MD, Andrea M. Seiler, MD, Jean-Pierre Pfammatter, MD, Gerhardt Printzen, MD, and Thierry P. Carrel, MD

2078 **Atrioventricular Septal Defect With Tetralogy of Fallot: Results of Surgical Correction**
Stacey B. O'Blenes, MD, David B. Ross, MD, Maurice A. Nanton, MD, and David A. Murphy, MD

Invited Commentary
Tjark Ebels, MD, PhD

CASE REPORTS

2085 Percutaneous Coronary Sinus Cannulation Guided by Transesophageal Echocardiography
Igor M. Plotkin, MD, Charles D. Collard, MD, Sary F. Aranki, MD, Robert J. Rizzo, MD, and Stanton K. Shernan, MD

2087 Transposition of the Great Arteries and Isolated Origin of the Sinus Node Artery
Massimo A. Mariani, MD, PhD, Tjalling W. Waterbolk, MD, and Tjark Ebels, MD, PhD

2089 Leiomyosarcoma of the Pulmonary Artery
Pascal Dumont, MD, Patrice Diot, MD, Michel R. Aupart, MD, and Bernard Toumieux, MD

2091 Damage to the Circumflex Coronary Artery During Mitral Valve Repair With Sliding Leaflet Technique
Giuseppe Tavilla, MD, and Davide Pacini, MD

2093 Compression of Anomalous Circumflex Coronary Artery by a Prosthetic Valve Ring
John P. Veinot, MD, Virbala C. Acharya, MD, and Pierre Bedard, MD

2095 Pelvic Leiomyoma in the Right Atrium
Takahiro Katsumata, MD, Amihay Shinfeld, MD, Rémi Houel, MD, and Stephen Westaby, FRCS

2096 Off-Pump Coronary Bypass Using Interposed Radial Artery Graft
Toshiki Takahashi, MD, Shigeaki Ohtake, MD, Takayoshi Ueno, MD, Masahiro Koh, MD, Yoshiki Sawa, MD, and Hikaru Matsuda, MD

2098 Primary Desmoid Tumor of the Posterior Mediastinum
Theodosios J. Dosios, MD, Dimitrios C. Angouras, MD, and Dimosthenis G. Floros, MD

2100 Daily and Long-Term Balloon Dilation via Minitracheostomy in Cicatric Bronchial Stenosis
Hiroaki Nomori, MD, Hirotoshi Horio, MD, and Keiichi Suemasu, MD

2102 Left Ventricular Pseudoaneurysm After Epicardial Patch Electrode Placement
William H. Maisel, MD, Jeanne M. Lukanich, MD, Raphael Bueno, MD, Peter L. Friedman, MD, PhD, and Sharon C. Reimold, MD

2104 A New Minimally Invasive Approach to the Subclavian Artery
Peter Y. Kim, MD, Uwe Klima, MD, Artur Lichtenberg, MD, Ingo Kutschka, MD, and Axel Haverich, MD

2106 Recurrence of Stage I Thymoma 32 Years After Total Excision
Wael I. Awad, FRCS, Pennie J. Symmans, MB ChB, and Jules E. Dussek, FRCS

2108 A Brimmed Valved Conduit in Repair of Fibrous Skeleton Abscess
Takayuki Kameyama, MD, Fumitaka Ando, MD, Fumio Okamoto, MD, Masaharu Hanada, MD, and Nozomu Sasahashi, MD

2110 Hydatid Cyst of the Interventricular Septum in a 3.5-Year-Old Child
Luis C. Maroto, MD, Yolanda Carrascal, MD, Maria J. López, MD, Alberto Forteza, MD, Ana Pérez, MD, and Claudio Zavanella, MD

Invited Commentary
Jorge Nin Vivó, MD, and Ramon Scola, MD

2112 The Surgical Importance of Coronary Sinus Orifice Atresia
James O. Fulton, FCS(SA), Carlos Mas, MD, Christian P. R. Brizard, MD, and Tom R. Karl, MD

HOW TO DO IT

2115 Repair of Right Ventricular Rupture Complicating Mediastinitis
Hon Chi Suen, MBBS, and Hendrick B. Barner, MD

2117 Facile Left Ventricular De-airing by Administration of Cardioplegia Into the Left Ventricular Vent
Steven R. Gundry, MD

2119 Biventricular Cannulation for the Thoratec Ventricular Assist Device
Francisco A. Arabía, MD, Venki Paramesh, MD, Bruce Toporoff, MD, David A. Arzouman, MD, Gulshan K. Sethi, MD, and Jack G. Copeland, MD

2121 Three-Graft Technique for Ascending Aorta and Total Aortic Arch Replacement
Gen-ya Yaginuma, MD, Yoshiyuki Iijima, MD, Kazuo Abe, MD, Yoshiyuki Okada, MD, and Michitoshi Ottomo, MD

2123 Endoscopic Harvesting of the Radial Artery as a Coronary Artery Bypass Graft
Yasushi Terada, MD, Akiko Uchida, MD, Ikuo Fukuda, MD, Julio Hochberg, MD, Toshio Mitsui, MD, and Fujio Sato, MD

2125 Reduction of Wound Healing Problems After Median Sternotomy by Use of Retention Sutures
Peter Lamm, MD, Oliver L. Gödje, MD, Thomas Lange, MD, and Bruno Reichart, MD

2127 **Mitral Valve Replacement With Homograft**
Donald B. Doty, MD, and Christophe Acar, MD

OUR SURGICAL HERITAGE

2132 **Lyman A. Brewer III (1907–1988): Surgeon-Scientist, Inspirational Teacher, and Humanist**
Richard Carter, MD

CURRENT REVIEWS

2135 **Effects of Cardiopulmonary Bypass on Leukocyte and Endothelial Adhesion Molecules**
George Asimakopoulos, FRCS, and Kenneth M. Taylor, FRCS

2145 **The Platelet in Cardiopulmonary Bypass**
Arjuna Weerasinghe, FRCS, and Kenneth M. Taylor, MD

UPDATE

2153 **The Carpentier-Edwards Pericardial Aortic Valve: Intermediate Results**
Robert W. M. Frater, MD

CORRESPONDENCE

2155 **Controlled Perfusion Protects Lung Grafts During a Transient Early Increase in Permeability**
Stephen J. Rooney, FRCS, and Robert S. Bonser, FRCS

Reply
Moninder S. Bhabra, FRCS, David N. Hopkinson, MD, Trudi E. Shaw, Natasha Onwu, MSc, and Timothy L. Hooper, MD

2155 **"Radial" and "Modified Papworth" Maze Procedures for Atrial Fibrillation**
Stephen R. Large, FRCS, and Andrew A. Grace, MD, PhD

Reply
Takashi Nitta, MD, Richard B. Schuessler, PhD, and John P. Boineau, MD

2157 **Left Atrial Wall Plication for Valve Replacement in Extensively Calcified Posterior Mitral Annulus**
Michele Triggiani, MD, Orazio Ferro, MD, and Ottavio Alfieri, MD

2158 **Reconstruction Plates for Internal Fixation of Flail Chest**
Peter U. Reber, MD, Horst W. Kniemeyer, MD, and Hans-Beat Ris, MD

Reply
J. Rodrigo Oyarzun, MD, Andrew P. Bush, MD, John R. McCormick, MD, and Paul J. P. Bolanowski, MD

2158 **Aortic Valve Replacement Using Circulatory Arrest**
Shuli Silberman, MD, Daniel Fink, MD, and Dani Bitran, MD

Reply
John G. Byrne, MD, Sary F. Aranki, MD, and Lawrence H. Cohn, MD

2159 **Modified Incision for the Long Saphenous Vein Harvest**
Hannan Chaugle, FRCS, and Daniel J. M. Keenan, FRCS

Reply
Andrew Chukwuemeka, FRCS, and Lindsay John, FRCS

2160 **Superior Sulcus Tumors**
Cemal Asim Kutlu, MD, Muzaffer Metin, MD, and Adnan Sayar, MD

Reply
Safuh Attar, MD

2161 **Growth of the Subclavian Artery to Pulmonary Artery Anastomosis: A Caveat**
Zohair Al-Halees, FRCSC, Omar Galal, MD, PhD, and Fadel Al-Fadley, FRCPC

Reply
Naoki Yoshimura, MD, Masahiro Yamaguchi, MD, Yoshihiro Oshima, MD, Teruo Tei, MD, and Kyoichi Ogawa, MD

2162 **Angiogenesis in Lung Cancer**
John S. Chambers, MD

Reply
Katsuhiko Matsuyama, MD

2163 **Angiotensin-Converting Enzyme Inhibitors During Acute Revascularization**
Harold L. Lazar, MD

2163 **Ischemic Preconditioning in Children Undergoing Open Heart Operation**
Luo Wan-Jun, MD

Reply
Keijo Peuhkurinen, MD, PhD

CORRECTIONS

2164 **Melendez JA, Barrera R. Predictive Respiratory Complication Quotient Predicts Pulmonary Complications in Thoracic Surgical Patients. Ann Thorac Surg 1998;66:220–4.**

2164 Hendriks JMH, Van Schil PEY, De Boeck G, Lauwers PRM, Van Oosteram AT, Van Marck EAE, and Eyskens EJM. Isolated Lung Perfusion With Melphalan and Tumor Necrosis Factor for Metastatic Pulmonary Adenocarcinoma. Ann Thorac Surg 1998;66: 1719–25.

2164 Trastek VF, Deschamps C, Allen MS, Miller DL, Pairolero PC, and Thompson AM. Uncut Collis-Nissen Fundoplication: Learning Curve and Long-Term Results. Ann Thorac Surg 1998;66:1739–44.

STS ANNUAL MEETING

2165 Thirty-fifth Annual Meeting

2166 Thirty-second Postgraduate Program

2166 Program for the Thirty-fifth Annual Meeting

REVIEW OF RECENT BOOKS

1885 Guiding the Surgeon's Hand, edited by Juan Rosai, MD
Thomas W. Shields

ANNOUNCEMENTS

A-42 Forthcoming Articles

A-43, A-44 Information for Authors

A-45 Guidelines for the Submission of Electronic Manuscripts

A-46–48 Events of Interest

1893, 2084 Notice From the American Board of Thoracic Surgery

1929 The Society of Thoracic Surgeons: Thirty-fifth Annual Meeting

1939 *The Annals of Thoracic Surgery* Cumulative Index

1962 New Feature, Images in Cardiothoracic Surgery

1977 J. Kent Trinkle, 1934–1998

2021 Kennedy School Sabbatical

2050 Important Announcement

2055 New Requirements for Recertification in the Year 2001

2077 New Senior Production Editor

2118 Discussion Groups on the Internet

A-51, A-52 Classified Advertisements

A-58 Index to Advertisers

INDEX TO VOLUME 66

2175 Author Index

2213 Subject Index

Number 6 December 1998 (Suppl)

S29 **Foreword**
Alain F. Carpentier, MD, PhD, and José L. Pomar, MD, PhD

VALVULAR BIOPROSTHESES OVER 15 YEARS

S30 **Twenty-Year Follow-up of the Hancock Modified Orifice Porcine Aortic Valve**
Lawrence H. Cohn, MD, John J. Collins, Jr, MD, Robert J. Rizzo, MD, David H. Adams, MD, Gregory S. Couper, MD, and Sary F. Aranki, MD

S35 **A 20-Year Experience With the Hancock Porcine Xenograft in the Elderly**
Steven S. Khan, MD, Aurelio Chaux, MD, Carlos Blanche, MD, Robert M. Kass, MD, Wen Cheng, MD, Gregory P. Fontana, MD, and Alfredo Trento, MD

S40 **Carpentier-Edwards Standard Porcine Bioprosthesis: A 21-Year Experience**
W. R. Eric Jamieson, MD, Lawrence H. Burr, MD, A. Ian Munro, MD, and Robert T. Miyagishima, MD

S44 **Determinants of 15-Year Outcome With 1,119 Standard Carpentier-Edwards Porcine Valves**
Donald D. Glower, MD, Kevin P. Landolfo, MD, Srinivas Cheruvu, MPH, Ye-Ying Cen, MA, J. Kevin Harrison, MD, Thomas M. Bashore, MD, Peter K. Smith, MD, Robert H. Jones, MD, Walter G. Wolfe, MD, and James E. Lowe, MD

S49 **Carpentier-Edwards Supraannular Porcine Bioprosthesis Evaluation Over 15 Years**
W. R. Eric Jamieson, MD, Hilton Ling, MD, Lawrence H. Burr, MD, Guy J. Fradet, MD, Robert T. Miyagishima, MD, Michael T. Janusz, MD, and Samuel V. Lichtenstein, MD, PhD

S53 Mitroflow Pericardial Bioprosthesis Experience in Aortic Valve Replacement ≥60 Years of Age
José L. Pomar, MD, PhD, W. R. Eric Jamieson, MD, L. Conrad Pelletier, MD, Manuel Castellá, MD, Eva Germann, MSc, and Richard T. Brownlee, MD

S57 15-Year Experience With the Carpentier-Edwards Pericardial Bioprosthesis
Nancy C. Poirier, MD, L. Conrad Pelletier, MD, Michel Pellerin, MD, and Michel Carrier, MD

S62 Prosthetic Replacement of the Tricuspid Valve: Biological or Mechanical?
Giulio Rizzoli, MD, Lorenza De Perini, MD, Tomaso Bottio, MD, Giuseppe Minutolo, MD, Gaetano Thiene, MD, and Dino Casarotto, MD

S68 Bioprosthetic Replacement After Bioprosthesis Failure: A Hazardous Choice?
Nicola Spampinato, MD, Cesare Gagliardi, MD, Donato Pantaleo, MD, Ludovico Fimiani, MD, Raimondo Ascione, MD, Fabio De Robertis, MD, Antonino Musumeci, MD, and Paolo Stassano, MD

S73 Long-Term Results of the Carpentier-Edwards Pericardial Aortic Valve: A 12-Year Follow-Up
Michael K. Banbury, MD, Delos M. Cosgrove III, MD, Bruce W. Lytle, MD, Nicholas G. Smedira, MD, Joseph F. Sabik, MD, and Craig R. Saunders, MD

S77 Aortic Valve Replacement in the Elderly: Bioprosthesis or Mechanical Valve?
Yves Logeais, MD, Thierry Langanay, MD, Hervé Corbineau, MD, Régine Roussin, MD, Claude Rioux, MD, and Alain Leguerrier, MD

S82 Valve-Related Complications in Elderly Patients With Biological and Mechanical Aortic Valves
Aldo Milano, MD, Cosimo Guglielmi, MD, Marco De Carlo, MD, Omar Di Gregorio, MD, Giancarlo Borzoni, MD, Francesco Verunelli, MD, and Uberto Bortolotti, MD

S88 Multivariate Analysis of Survival After Malfunctioning Biological and Mechanical Prosthesis Replacement
Giulio Rizzoli, MD, Tomaso Bottio, MD, Lorenza De Perini, MD, Domenico Scalia, MD, Gaetano Thiene, MD, and Dino Casarotto, MD

BIOPROSTHETIC VALVES AND CONDUITS: NEW DEVELOPMENTS

S95 The Hancock II Bioprosthesis at 12 Years
Tirone E. David, MD, Susan Armstrong, MSc, and Zhao Sun, PhD

S99 Hancock Versus Stentless Bioprostheses for Aortic Valve Replacement in Patients Older Than 75 Years
Francesco Santini, MD, Paolo Bertolini, MD, Giuseppe Montalbano, MD, Barbara Vecchi, MD, Renzo Pessotto, MD, Antonia Prioli, MD, and Alessandro Mazzucco, MD

S104 Reoperation on Stentless Aortic Xenografts
Giovanni Battista Luciani, MD, Paolo Bertolini, MD, Barbara Vecchi, MD, and Alessandro Mazzucco, MD

S110 Endothelialization of Biosynthetic Vascular Prostheses After Laser Perforation
Martin Grabenwöger, MD, Florian Fitzal, MD, Jamil Sider, MD, Christoph Csekö, PhD, Helga Bergmeister, MD, Heinrich Schima, PhD, Wolfgang Husinsky, PhD, Peter Böck, MD, and Ernst Wolner, MD

S115 Evaluation of a Porcine Internal Mammary Artery (No-React II) as a Small-Diameter Conduit
Stefan Ostapczuk, MD, Jacek Poniewierski, MD, Andreas Thiel, MD, Hans-Juergen Knieriem, MD, Tadeusz Orlowski, MD, Gerhard Rakhorst, MD, and Arno Krian, MD

S118 Medtronic Intact Porcine Bioprosthesis: 10 Years' Experience
W. R. Eric Jamieson, MD, Michel D. Lemieux, MD, John A. Sullivan, MD, A. Ian Munro, MD, Jacques Métras, MD, and Paul C. Cartier, MD

S122 Medtronic Mosaic Porcine Bioprosthesis Satisfactory Early Clinical Performance
Dorothy J. Thomson, MD, W. R. Eric Jamieson, MD, Jean G. Dumesnil, MD, Edward F. G. Busse, MD, Charles M. Peniston, MD, Jacques Métras, MD, James G. Abel, MD, John A. Sullivan, MD, and James C. W. Parrott, MD

S126 The Mosaic Bioprosthesis in the Aortic Position: Hemodynamic Performance After 2 Years
Walter B. Eichinger, MD, Albert Schütz, MD, Daniela Simmerl, MD, Brigitte U. Gansera, MD, Martin Breuer, MD, Bernhard Haslinger, MD, and Bernhard M. Kemkes, MD

S130 Hemodynamic Features of the Freestyle Aortic Bioprosthesis Compared With Stented Bioprosthesis
Jean G. Dumesnil, MD, Marie-Hélène LeBlanc, MD, Paul C. Cartier, MD, Jacques Métras, MD, Denis Desaulniers, MD, Daniel P. Doyle, MD, Michel D. Lemieux, MD, and Gilles Raymond, MD

S134 The Stentless Cryolife-O'Brien Aortic Porcine Xenograft: A 5-Year Follow-up
Ulrik Hvass, MD, and Mark F. O'Brien, FRACS

S139 Early Calcific Stenosis of the Aortic Sorin Pericarbon Valve Implanted in the Elderly
Yves d'Udekem, MD, Agnès Pasquet, MD, Gebrine A. El Khoury, MD, Johan Nouwen, MD, Jean-Louis J. Vanoverschelde, MD, PhD, Annie Robert, PhD, and Robert A. Dion, MD

S143 Carpentier-Edwards Pericardial Bioprosthesis in Aortic or Mitral Position: A 12-Year Experience
Paul H. Neville, MD, Michel R. Aupart, MD, Frank F. Diemont, MD, Agnes L. Sirinelli, MD, Eric M. Lemoine, MD, and Michel A. Marchand, MD

AUTOGRAFTS AND ALLOGRAFTS

S148 Aortic Root Replacement With a Pulmonary Autograft in Young Adults: Medium-Term Results in 70 Patients
Alain Prat, MD, Daniel Grandmougin, MD, Christophe Decoene, MD, François R. Godart, MD, José I. Saez de Ibarra, MD, Christine Savoye, MD, Yves Goffin, MD, PhD, and Czeslas Stankowiak, MD

S153 Cardiopulmonary Response to Maximal Exercise in Young Athletes Following the Ross Procedure
James H. Oury, MD, Donald B. Doty, MD, John D. Oswalt, MD, Joseph F. Knapp, MD, S. Katie Mackey, RN, and Carlos M. G. Duran, MD, PhD

S155 Effect of Papillary Muscle Position on Mitral Valve Function: Relationship to Homografts
Richard P. Cochran, MD, and Karyn S. Kunzelman, PhD

S162 The Ross Procedure: Current Registry Results
James H. Oury, MD, Stephen P. Hiro, MD, J. Matthew Maxwell, MD, John J. Lamberti, MD, and Carlos M. G. Duran, MD, PhD

S166 Treated Bovine and Autologous Pericardium for Aortic Valve Reconstruction
Carlos M. G. Duran, MD, PhD, Begonia Gometza, MD, Mae Shahid, MD, and Zohair Al-Halees, FRCS

S170 Comparison of Ross Procedures and Aortic Valve Allografts in Children
Thomas K. Jones, MD, and Flavian M. Lupinetti, MD

S174 Intermediate Follow-up of Right Ventricular Outflow Tract Reconstruction With Allograft Conduits
Jacques G. LeBlanc, MD, Jennifer L. Russell, MD, Suvro S. Sett, MD, and James E. Potts, PhD

S179 Porcine Stentless Valve/Bovine Pericardial Conduit for Right Ventricle to Pulmonary Artery
Mario O. P. Vrandecic, MD, Fernando A. Fantini, MD, Bayard F. Gontijo, MD, Cristiane Nunes Martin, MD, and Erika Vrandecic, MD

S183 Truncus Arteriosus: Ten-Year Experience With Homograft Repair in Neonates and Infants
Andreas E. Urban, MD, Nicodeme Sinzobahamvya, MD, Anne Marie Brecher, MD, Jutta Wetter, MD, and Stephan Malorny, MD

S189 Aortic Root Replacement in Adolescents and Young Adults: Composite Graft Versus Homograft or Autograft
Giovanni Battista Luciani, MD, Gianluca Casali, MD, Francesco Santini, MD, and Alessandro Mazzucco, MD

S194 Aortic Homografts Versus Mechanical Valves in Aortic Valve Replacement in Young Patients: A Retrospective Study
Christoph Gross, MD, Uwe Klima, MD, Rudolf Mair, MD, and Peter Brücke, MD

BASIC RESEARCH

S198 Altered Collagen Concentration in Mitral Valve Leaflets: Biochemical and Finite Element Analysis
Karyn S. Kunzelman, PhD, David W. Quick, MS, and Richard P. Cochran, MD

S206 In Vitro Testing of Bioprostheses: Influence of Mechanical Stresses and Lipids on Calcification
Michael Deiwick, MD, Birgit Glasmacher, PhD, Hideo A. Baba, MD, Norbert Roeder, MD, Helmut Reul, PhD, Gert von Bally, and Hans H. Scheld, MD

S212 Effect of HLA Mismatching and Antibody Status on "Homovital" Aortic Valve Homograft Performance
John D. Smith, BSc, Philip I. Hornick, FRCS, Nasser Rasmi, MD, Marlene L. Rose, PhD, and Magdi H. Yacoub, FRCS

S216 Histologic and Immunohistochemical Responses After Aortic Valve Allografts in the Rat
Marjorie K. Green, PhD, Michael D. Walsh, Bsc, Anthony Dare, FRCPA, Patrick G. Hogan, FRCPA, Xiao-Ming Zhao, MD, Ian H. Frazer, FRCPA, Amolak S. Bansal, FRCPA, and Mark F. O'Brien, FRACS

S221 Effect of Antibiotic Pretreatment on Immunogenicity of Human Heart Valves and Component Cells
Delia L. Johnson, PhD, Cathryn Sloan, BSc, Angela O'Halloran, FIBMS, and Magdi H. Yacoub, FRCS

S225 Tissue Chimerism in Human Cyropreserved Homograft Valve Explants Demonstrated by In Situ Hybridization
David R. Koolbergen, MD, Mark G. Hazekamp, MD, PhD, Maurice Kurvers, MD, Emil de Heer, MD, PhD, Cees J. Cornelisse, MD, PhD, Hans A. Huysmans, MD, PhD, and Jan A. Bruijn, MD, PhD

S233 Postimplantation Leaflet Cellularity of Valve Allografts: Are Donor Cells Beneficial or Detrimental?
Lois C. Armiger, PhD

S236 Infrared Spectroscopy in the Evaluation of the Process of Calcification of Valvular Bioprostheses
Ming Shen, MD, PhD, Paul S. Lajos, MD, Dominique Farge, MD, PhD, Michel Daudon, PhD, Sophie M. Carpentier, PhD, Lin Chen, MD, Bernard Martinet, and Alain F. Carpentier, MD, PhD

S240 Assessment of Glutaraldehyde Crosslinking Efficiency With an Amine-Specific Fluorescent Probe
Jeffrey Ricks, BA, Michael Scott, PhD, and Ivan Vesely, PhD

S245 Evaluation of Porcine Valves Prepared by Dye-Mediated Photooxidation
Mark A. Moore, PhD, Richard E. Phillips, Jr, PhD, Brian K. McIlroy, PhD, Virginia M. Walley, MD, and Paul J. Hendry, MD

S249 Comparison of Different Anticalcification Treatments for Stentless Bioprostheses
Thomas Walther, MD, Volkmar Falk, MD, Rüdiger Autschbach, MD, PhD, Anno Diegeler, MD, Thomas Rauch, PhD, Claudia Weigl, MD, Beatrice Günther, Jacques A. M. van Son, MD, PhD, and Friedrich W. Mohr, MD, PhD

S255 Does Glutaraldehyde Induce Calcification of Bioprosthetic Tissues?
André Vincentelli, MD, Christian Latrémouille, MD, Rachid Zegdi, MD, Ming Shen, MD, PhD, Paul S. Lajos, MD, Juan Carlos Chachques, MD, PhD, and Jean-Noël Fabiani, MD

S259 Early Clinical Experience With the Tissuemed Porcine Bioprosthesis
Ira Goldsmith, FRCS, Seshadri Mukundan, MCh, Ann Nugent, and Michael D. Rosin, FRCS

S264 Heat Treatment Mitigates Calcification of Valvular Bioprostheses
Sophie M. Carpentier, PhD, Lin Chen, MD, Ming Shen, MD, PhD, Paul Fornes, MD, PhD, Bernard Martinet, Lillian J. Quintero, MS, Thomas H. Witzel, MS, and Alain F. Carpentier, MD, PhD